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A RETAIL SALES TAX FOR ALBERTA:  
AN ECONOMIC EVALUATION OF ALTERNATIVE STRUCTURES

By

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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES  
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE  
DEGREE OF MASTER OF ARTS

DEPARTMENT OF ECONOMICS

EDMONTON, ALBERTA

FALL, 1969



UNIVERSITY OF ALBERTA  
FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "A Retail Sales Tax for Alberta: An Economic Evaluation of Alternative Structures", submitted by Allison Douglas O'Brien in partial fulfillment of the requirements for the degree of Master of Arts.



## ABSTRACT

Alberta was the first Canadian province to introduce a retail sales tax. The tax, known as the "ultimate purchaser's tax", was introduced May 1, 1936, but, as a result of public and political opposition to the tax, was eliminated in August, 1937.

Recommendations for the re-introduction of a retail sales tax in the province have become increasingly frequent in recent years. Among those recently recommending the introduction of a retail sales tax, have been two government-appointed committees --The Revenue-Expenditure Study Committee and the Minister's Committee on Education Finance.

Retail sales taxes take a variety of forms. This study evaluates the performance of several alternative retail sales tax structures under four basic tax policy criteria. The factors considered are equity, yield, neutrality, and administrative considerations.

While no one form of retail sales tax examined is found clearly superior under all criteria, the study does conclude that, among the structures considered, the form of tax recommended by the Royal Commission on Taxation would provide the most acceptable tax structure on an over-all basis.





## ACKNOWLEDGMENTS

The Dominion Bureau of Statistics provided unpublished income and expenditure data for families and unattached individuals, without which the study could not have been undertaken. The Alberta Bureau of Statistics also assisted in locating and obtaining empirical data.

I must express my appreciation to my former employer, the Provincial Treasurer's Department, Government of Alberta, for assistance and encouragement in completing my graduate program.

I am most grateful to Professor Vladimir Salyzyn, who has contributed much of his valuable time in discussion and criticism of methodology and of preliminary drafts.

To Professor Eric Hanson, I am indebted for originally stimulating my interest in the study of public finance, and for the assistance and encouragement he has offered me.



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## CHAPTER I

### INTRODUCTION

The Province of Alberta has recently experienced large budgetary deficits for the first time in almost thirty years. A budget deficit of \$87 million was experienced in the 1966-67 fiscal year, followed by a \$99 million deficit in the 1967-68 fiscal year, with further deficits anticipated in the budgets for the 1968-69 and 1969-70 fiscal years. The first direct Provincial debenture borrowing since 1951 was undertaken early in 1969, when a \$30 million issue was sold in the U.S. market. The 1969 Budget increased personal income tax rates by 18 per cent, corporate income tax rates by 10 per cent, and introduced a tobacco tax in Alberta for the first time.

The province's municipalities, schools, and hospitals, have faced a steadily deteriorating financial situation in recent years, in spite of significant increases in property tax rates.<sup>1</sup> The resulting political pressure to ease property tax burdens through increased provincial





financial aid to local levels of government has added to the fiscal pressures arising from the growth of expenditures at the provincial level.

Foreseeing this situation, the Revenue-Expenditure Study Committee concluded in 1965, that the "only . . . choice open to the Province would appear to be the levying of a retail sales tax." <sup>2</sup> The Committee considered this "not a palatable alternative in view of the fact that such a tax is a nuisance both to the consumer and to the retail business firm . . ." <sup>3</sup> but thought "it likely that a sales tax will. . . be required to sustain the high level of expenditure which our citizens apparently expect government to make on their behalf." <sup>4</sup>

The absence of any indication from the Government of Canada that it is willing to further reduce its share of income tax revenues in order to reduce financial pressures at the provincial level reinforces the view that a retail sales tax will be required in Alberta.

The present study examines some of the factors relevant to the choice of a particular form of retail sales tax in Alberta. It is not the purpose of the study to examine the question of whether a sales tax should be introduced in Alberta. It has been assumed that the "high level of expenditure which our citizens apparently expect Government to make, "combined with the restraints on taxation alternatives imposed on an



individual government under a federal system, will result in fiscal pressures on the Government of Alberta which leave little choice regarding the introduction of a retail sales tax.

One of the most frequent concerns expressed regarding the imposition of retail sales taxes is the regressivity of this form of tax. It has been widely argued that retail sales taxes impose an inequitable tax burden on taxpayers in the lower income brackets. While no form of retail sales tax may be completely acceptable from the point of view of equity, the choice of a particular retail sales structure may result in a more or less acceptable distribution of tax burdens. Because of the importance attached to this consideration, the study will concentrate on measuring the incidence of alternative forms of retail sales tax among income classes. The conceptual and empirical problems encountered in the measurement of retail sales tax incidence are examined in Chapters II and III, and estimates of tax incidence for five alternative forms of retail sales tax are presented in Chapter IV. Chapter V examines the implications of these estimates in choosing an appropriate form of retail sales tax, together with considerations other than incidence which might be expected to be of significance in adopting a specific retail sales tax structure.



Three studies of the incidence of retail sales taxes have been made in Canada. The first was that of I. J. Goffman, who analysed the incidence of the Canadian tax system for the year 1957;<sup>5</sup> the second was a general analysis of fiscal incidence prepared by W. I. Gillespie for the Royal Commission on Taxation, utilizing 1961 data;<sup>6</sup> the third is contained in a similar study prepared for the Ontario Committee on Taxation by J. A. Johnson.<sup>7</sup> In view of these studies, it is perhaps not unreasonable to question the need for further study of retail sales tax incidence. It was felt that further analysis of retail sales tax incidence was warranted for the following reasons:

- (1) All of the above mentioned studies considered the incidence of existing Canadian retail sales taxes only; the present study attempts to examine differences in the incidence of various hypothetical forms of retail sales tax.
- (2) Social and economic differences between regions create disparities in regional income and expenditure patterns which suggest that the conclusions derived from Canadian studies may not be completely relevant to Alberta.
- (3) None of the above studies examined the significance of taxation of business expenditures under existing Canadian retail sales taxes in the distribution of tax burdens.



- (4) The three studies utilized 1957, 1959, and 1961 expenditure data, respectively, in distributing tax burdens. The estimates developed in the present study utilize 1964 data. To the extent that expenditure patterns have changed over these periods, the results of the present study will be more representative of current economic conditions.

Five alternative forms of retail sales tax have been examined in the study. It is hoped that an examination of the characteristics of these hypothetical taxes will assist in evaluating the major variations in the tax structure which would be likely to be considered by policy makers in adopting a particular retail sales tax in Alberta. The taxes have been labelled: the Consumption Tax, the Food-Exempt Tax, the Average Tax, the Ontario Tax, and the Carter Tax.

The Consumption Tax is assumed to be one under which all money expenditure for consumer goods and services is subject to tax, while all business expenditure, including retail purchases, is exempt.

The Food-Exempt Tax assumes a tax structure identical to that of the Consumption Tax, except that food expenditures are exempt.

The Average Tax assumes a tax structure comparable to that of existing provincial retail sales taxes in Canada. The nine provinces presently levying a general retail sales tax do not follow a completely







uniform tax structure, but the taxes do tend to have common characteristics. Population has been used as the criterion in defining the Average Tax structure, where there are differences in the individual provincial taxes. Where provinces having a combined population greater than one-half that of the total population of the nine provinces levying a retail sales tax, tax a particular item, it has been assumed taxable under the Average Tax.

Given this criterion, it is assumed that the tax base includes:

- (1) all retail sales except food, tobacco, gasoline, infants and children's clothing, repairs and services, prescribed medicines, newspapers, magazines, books, farm supplies, and sales of fuel;
- (2) construction materials except those used in construction of churches and hospitals;
- (3) machinery and equipment investment except farm and fishing equipment;
- (4) local telephone calls;
- (5) hotel and motel accommodation;
- (6) non-retail liquor purchases; and
- (7) meals costing more than one dollar.



The Ontario Tax assumes a retail sales tax identical to the structure of the tax imposed in Ontario effective April 1, 1969.

The tax differs from the Average Tax in that:

- (1) amusement admissions, meals, and liquor purchases, are taxable at double the rate levied on other expenditures;
- (2) meals costing less than \$2.50 are exempt; and
- (3) construction materials for use in municipal and institutional construction are exempt.

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The Carter Tax is assumed to be one conforming to the retail sales tax structure recommended by the Royal Commission on Tax-  
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 ation. The chief characteristic of the form of tax recommended by the Commission is that it would broaden the retail sales tax to include the taxation of most expenditures for consumer services, which are generally exempt under existing provincial retail sales taxes.



NOTES

1

See the Alberta Municipal Finance Study (A submission to the Government of Alberta by the Alberta Urban Municipalities Association, 1968).

2

Report of the Revenue - Expenditure Study Committee (Edmonton: Queen's Printer, 1966), p. 126.

3

Ibid., p. 127.

4

Ibid., p. 127.

5

The Burden of Canadian Taxation ("Tax Paper No. 29"; Toronto: The Canadian Tax Foundation, 1962).

6

The Incidence of Taxes and Public Expenditures in the Canadian Economy ("Studies of the Royal Commission on Taxation, No. 2"; Ottawa: Queen's Printer, 1966).

7

The Incidence of Government Revenues and Expenditures ("A Study prepared for the Ontario Committee on Taxation", Toronto: Queen's Printer, 1968).

8

Information on the structure of existing provincial retail sales taxes was obtained from Dominion Bureau of Statistics, Principal Taxes and Rates, 1967 (Ottawa: Queen's Printer, 1967).

9

The structure of the Ontario retail sales tax was obtained from Principal Taxes and Rates, 1967, supplemented by information on tax changes implemented in 1969 from Government of Ontario, Ontario Budget 1969 (Toronto: Ontario Department of Treasury and Economics, 1969), pp. 26-28.

10

Report of the Royal Commission on Taxation (Ottawa: Queen's Printer, 1966).



## CHAPTER II

### THE MEASUREMENT OF TAX INCIDENCE: CONCEPTS AND METHODS

#### THE CONCEPT OF INCIDENCE

The study of incidence is concerned with the effect of taxation on the economic position of the taxpayers. It has traditionally been defined as "the settlement of the burden (of a tax) on the ultimate taxpayer"<sup>1</sup>.

The interpretation of the term 'burden', however, results in a number of conceptual problems. If the burden of a tax is defined as the amount by which private sector output is reduced below levels which would be attained in the absence of the tax, there may not exist any tax burden. This could result where the tax is substituted for another form of tax, or where it is imposed at a time when all factors of production are not fully employed.

A further problem arises from the implied correspondence of tax burdens with tax revenues. The individual who stops drinking to avoid liquor taxes obviously finds his welfare affected by the tax, although no portion of the tax rests with him.





These problems have led many students of incidence to reject the concept of 'ultimate burden'. Musgrave defines incidence of a given budget policy, including taxation, as "the resulting change in the distribution of income available for private use."<sup>2</sup> This definition of incidence, when measured in terms of real income, allows for the inclusion in the study of incidence of all changes in the relative economic position of taxpayers resulting from the imposition of a tax, regardless of whether these changes result directly from the payment of taxes, or from other economic adjustments to the tax. Musgrave attaches "no special significance to changes that come about in the direct path of transactions in the taxed product or service, compared with those which come about in the indirect path of subsequent adjustments."<sup>3</sup>

Musgrave suggests that his concept of incidence can be measured by comparing the state of distribution of real income, (as measured by the area under a Lorenz curve), after the imposition of a tax, to the previously existing state of distribution. Where the ratio of the former to the latter is greater than 1, the over-all incidence of the tax is progressive; if equal to 1, it is proportional; if less than 1, it is regressive.

As we cannot actually measure both the pre- and the post-tax income distributions simultaneously, we must infer the changes in the



distribution of income which would result, or have resulted, from the imposition of a particular tax, on the basis of assumptions regarding the effect of the tax on individual real incomes. In fact, then, the measurement of relative changes in the income distribution resulting from a tax requires the measurement of absolute changes. The assumptions which must be made in developing a measure of these absolute changes result in an empirical approach to incidence similar to that implied in the 'ultimate burden' definition.

Although the present study is basically concerned with the effect of various forms of retail sales tax on the relative distribution of income, it has been necessary to assume that, in the aggregate, real incomes are reduced by the amount of revenue collected under a particular form of the tax. It has further been necessary to assume that the pattern of changes in real incomes corresponds to the pattern of tax payments. In other words, it has been assumed that if an individual does not pay any portion of the tax, his real income is unaffected by the tax.

The empirical results obtained in the present study are therefore subject to the criticism referred to above of the 'ultimate burden' concept of incidence: they do not reflect changes in real income resulting from adjustments in expenditure patterns resulting from the tax. The



distortions resulting from this approach are likely to be less severe in the case of a general sales tax than would be the case for a tax on an individual commodity, however. While some shift in expenditure from taxed to untaxed commodities, or from expenditure to saving, could be expected, the effect of these adjustments on real income would be relatively much less significant than the effects on real income of consumption of taxed products.<sup>5</sup> In the case of an excise tax on an individual commodity or service, adjustments in consumption would be expected to have much greater relative significance.

### THE MEASURE OF ECONOMIC WELFARE

The present study analyses tax incidence in terms of the income of taxpaying units. It should be recognized, however, that incidence can be defined and measured relative to indices other than income. Essentially, the study of incidence is undertaken to describe the effect of taxation on individuals in terms of characteristics of these individuals considered relevant to tax policy goals.

The particular goal with which one is concerned will determine the most appropriate index, or indices, for analysis of tax incidence. A study of the performance of taxation in promoting economic growth, for example, might well be concerned with the savings of taxpaying units,





or with sources of income, rather than income itself. The measures of incidence developed here are primarily intended to provide information for the evaluation of the performance of alternative forms of retail sales tax relative to the goal of equity. This requires the analysis of incidence in terms of some measure of the economic welfare of families.

Ideally, a measure of economic welfare should be a net measure of both human and non-human wealth owned by the individual economic unit. We can measure net non-human wealth at any given point in time fairly readily by netting liabilities against assets, although empirical studies of an inclusive nature are not well-developed in Canada. No insurmountable conceptual or empirical problems arise in developing such data however.

The measurement of human capital, that is, the asset-value of an individual unit's income-earning capacity, is much more difficult; particularly if a net measure is required. Conceptually, the measure should consist of the capitalized value of expected life-time income, excluding income from non-human assets, less the capitalized value of expected life-time expenditures necessary for acquiring and maintaining this human capital. Such a measure presents not only serious empirical problems, but difficult conceptual problems -- particularly in the definition of expenditures which should be netted against earnings in the





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measure of capital. The most serious empirical problems arise in attempting to measure expected life-time income when only current income data is available, in measuring the expenditures defined as necessary for the acquisition and maintenance of human capital, and in choosing appropriate rates of interest for capitalization.

An interesting attempt to provide a measure of economic welfare

approximating this ideal has been made recently by Hansen and

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Weisbrod. Their study attempts to measure economic welfare by converting net worth to life-time annuity, using various interest rate assumptions, and adding the annuity value to current income (excluding interest on assets). Several problems arise in their approach, however: firstly, they add a net measure of non-human capital (net worth) to a gross measure of human capital (current income); secondly, they do not adjust current income to an expected life-time value. Apart from the problem of income changes over the life-span, they have ignored the fact that current income would usually be expected to continue only up to retirement. This results in a serious over-weighting of current income, which distorts the measure of economic welfare of persons close to retirement.

An alternative to the measurement of economic welfare by either income or assets is that of using expenditure. The most forceful



proponent of this alternative has been Nicholas Kaldor, although John Stuart Mill, A. C. Pigou, Irving Fisher, and more recently D. G. Davies, have also supported the use of expenditure as a measure of economic welfare. Kaldor argues that expenditure must reflect both income (including capital gains) and assets, and thus constitutes an ideal measure of economic welfare. He argues that, "Accruals from the various (income) sources cannot be reduced to a common unit of spending power on any objective criteria. But each individual performs this operation for himself when, in the light of all his present circumstances and future prospects, he decides on the scale of his personal living expenses." <sup>10</sup>

This is a very compelling argument: in utilizing expenditure as a measure of welfare, problems presented in choosing an interest rate and life-span to reduce assets to an annuity value are avoided. The use of life-annuity conversions of assets in a welfare measure forces a social value-judgment regarding estates. If a portion of net worth should be regarded as being 'held in trust' for future generations, then only the remaining portion of net worth should be

included in the welfare measure. It is argued that the use of expenditure avoids this problem, by leaving the judgment regarding the proportion of income which should be spent to the individual.



The chief objections to the use of expenditure as a measure of economic welfare are subjective. Neither the individual, nor society, regards a dollar spent from savings, or from potential earnings, as representing the same economic well-being as a dollar spent from current income. This may be partly explained by the fact that capital markets do not function perfectly, so that the individual cannot borrow at will against future earnings, and by the fact the individual does not have perfect knowledge of expected life-time income flows and expenditure requirements. More likely it results from a presumption that where consumption exceeds income, it reflects 'necessity', rather than economic welfare.

Another objection is that, while it is empirically convenient to avoid the problem of social value-judgments regarding saving and estates, the very purpose of measuring economic welfare is to allow social value-judgments regarding the equity of tax incidence. The use of consumption assumes that income which the individual saves toward an estate does not form part of his economic welfare; but this would not appear to be an assumption commonly accepted in our society.

Empirical problems involved in developing net measures of human and non-human wealth, in either stock or flow terms, and conceptual objections to the use of expenditure, have resulted in the use of current



income as an indicator of economic welfare in most empirical studies of incidence. The current income measure is undoubtedly also preferred simply because it has come to be accepted in our society as an appropriate measure of welfare.

The Ontario Committee on Taxation has outlined five concepts of current income which provide a very complete inventory of the alternative concepts available. They have labelled them: family money income; personal income; adjusted personal income; pre-government income; and, post-government income.

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'Family money income' is the total cash receipts of members of a family (the definition of 'family' is discussed below) and represents the concept of income which would be held by most families. 'Personal income' adds imputed elements, such as rent, interest and home-produced food to money income. The 'adjusted personal income' measure adds to this figure income not received by individuals, that is, retained earnings of corporations, the portion of corporate tax shifted back to shareholders, social insurance levies, and other miscellaneous business taxes. The 'pre-government income' concept nets government transfer payments from the 'adjusted personal income' to give a measure of income before any government taxes or expenditures. 'Post-government income'







then deducts from this income measure all taxes paid (directly or indirectly), and adds the value of government benefits (both transfer payments and goods and services provided).

It should be noted that none of the Smith Committee income concepts include capital gains. This omission probably results more from the paucity of empirical data on capital gains in Canada, than from any conviction that capital gains do not properly form a part of a current income measure. While capital gains are relatively unimportant in absolute terms-- Conway estimated Canadian capital gains in 1965 to be only \$994 millions,<sup>14</sup> compared to personal income of \$38,902 millions--they are likely to have an important effect on the relative income distribution as a result of their concentration in upper income levels.

The Smith Committee Study has chosen to use the post-government income concept.<sup>15</sup> While admitting that both the pre- and post-government income concepts are logically consistent, the study suggests that post-government income provides the better measure of economic welfare. "Taxes are not included because families do not have or enjoy the income that is paid in taxes. Conversely they do enjoy the benefits received from government expenditures and these benefits are similar



to receiving higher income . . . The post-government concept is also chosen over the pre-government concept because the latter is an estimate of the income that would exist in the absence of government and thus is more artificial. "

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The use of a post-government income concept requires the estimation of both the incidence of benefits received from government expenditures, and of all forms of taxation. It can therefore only be measured as part of a general study of fiscal incidence. For this reason, most studies of tax incidence have utilized a less comprehensive income measure.

In the first broad study of tax incidence conducted in Canada, I. J. Goffman used a personal income measure, to which shifted corporate taxes were added for consistency with his tax incidence assumptions.

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In his study of tax and expenditure incidence for the Royal Commission on Taxation, W. I. Gillespie utilized a pre-government income measure, but provides data utilizing the post-government concept in

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the Appendix to his study. The income concept used did not alter

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the pattern of net fiscal incidence (benefits minus taxes), but did alter the pattern of tax incidence in the \$2, 000 to \$2, 999 and \$3, 000 to \$3, 999 income brackets. Using the pre-government concept, tax



incidence was found to be regressive over the \$2, 000 and \$3, 000 brackets, while using the post-government concept, tax incidence was found to be progressive between the \$2, 000 and \$3, 000 brackets, and proportional for the \$3, 000 bracket.

The scope of the present study necessitates the use of a personal income measure, as the pre-government concept requires an analysis of the incidence of retained corporate earnings and of any taxes assumed to be shifted backward to factors of production, while the post-government concept required an analysis of the incidence of all government revenue and expenditure programs.

While the personal income measure was adopted largely for empirical reasons, the choice of this measure can be defended on other grounds in the context of the present study. As was stated in Chapter I, the study is concerned with providing information relevant to the choice of a particular form of retail sales tax, rather than to the decision to implement a retail sales tax. It is therefore concerned with comparing the incidence of various forms of retail sales tax, relative to one another, rather than with the absolute pattern of incidence of the taxes. While the use of personal income may alter the estimates of incidence from those that would be obtained using a more comprehensive income



measure, it will not affect the comparative incidence of different forms of tax.

A detailed description of the personal income concept used here, and the empirical basis for the income distribution matrix, is given in Chapter III.

### THE TAXPAYING UNIT

The definition of taxpaying units used in this study utilizes the 'economic family' and 'unattached individual' concepts followed in published data on income distribution in Canada. The 'economic family' concept attempts to group individuals who are economically interdependent. The Dominion Bureau of Statistics defines the economic family as "a group of two or more persons living together and related to each other by blood, marriage, or adoption."<sup>21</sup> This concept is somewhat broader than that of the census family, which is defined as "a husband and wife (with or without children who have never married) or a parent with one or more children never married, living together in the same dwelling."<sup>22</sup> Unattached individuals are those persons not in economic families.

Ideally, a subjective definition of the taxpaying unit would be desirable. Certain persons may be economically interdependent, even







though they do not share a common dwelling; while in other cases related persons sharing a common dwelling may be entirely financially independent. The economic family definition has been followed here because statistical data on family income distribution is available only on an economic family basis.

The expenditure data used in distributing tax burdens is based on data for 'spending units', defined as "a group of persons dependent on a common or pooled income for the major items of expense and living in the same dwelling"<sup>23</sup>. As this definition would in most instances result in the same definition for the spending unit as that obtained by applying the economic family concept, no serious distortions in the calculation of tax burdens will result.

The term 'family units' will be used throughout the paper to refer to all taxpaying units, that is, both economic families and unattached individuals.

Having defined the taxpaying unit, our next problem is to aggregate individual units into groups or classes which can be dealt with empirically. In principle, it would be desirable to measure the tax paid by each unit in the economy. We could then aggregate these units in any way we wished for purposes of analysing the incidence of the



tax. Unfortunately, data limitations force us to use the opposite approach--we must group taxpaying units first and then attempt to estimate the burden of the tax on these groups. In classifying individual economic units, we are faced by two conflicting objectives. On the one hand we wish to preserve a maximum degree of homogeneity within each grouping of units. On the other hand, it is essential that we achieve a simplified grouping in order that we be able to comprehend and utilize the information presented. The choice of any particular grouping must therefore result from a somewhat arbitrary trade-off between the two objectives. In practice, of course, this decision is severely restricted by data limitations.

Our starting point in considering the problem of classification must be an examination of the relevant variables in which homogeneity is desirable. The two variables of immediate concern are taxes paid and the economic welfare (income.) Our classification should attempt to group units whose income and tax burdens are reasonably homogeneous. The latter consideration, homogeneous tax burdens, is one which has been given rather less attention in the literature of tax incidence than the former. It is obvious that if the results of a study of incidence are to be meaningful, however, it is of equal importance that the tax



burdens of a given group be homogeneous, as that their incomes be homogeneous. In the case of a retail sales tax, it will be argued that the burden of the tax is determined by the size and distribution of consumer expenditures.

Units have been grouped here by current money income. As current income is usually a significant determinant of consumption expenditures, it can be assumed that estimated tax burdens are reasonably homogeneous, at least in the closed income brackets. We know, however, that many other variables may influence consumption expenditure. Size of family, age, wealth, occupation--- numerous variables other than current income will influence the size and distribution of consumption expenditures. To the extent that these other variables influence expenditure, average tax burdens estimated for each income class will not be representative of each taxpaying unit in the class.

One further classification of taxpaying units has been made. Units have been classified into farm and non-farm groups. Existing consumer expenditure surveys in Canada cover urban units only. The significant differences in the farm and non-farm income distribution made it necessary to develop an independent estimate of farm consumption in order to estimate the pattern of incidence for the Albertan population as a whole.



The farm breakdown also removed one obvious source of heterogeneity in sales tax burdens. A significant portion of farm consumption is in the form of home-produced food and fuel. As this consumption would not be taxed, farm and non-farm units with the same real income and consumption would not bear the same tax burdens where these items form part of the tax base.

### SHIFTING ASSUMPTIONS

Retail sales taxes, as levied by the provinces in Canada, are statutorily purchase taxes, that is, the purchaser is legally responsible for payment of the tax. However, in all cases the vendor is made an agent of the Crown legally responsible for collecting the tax. While the statutes clearly intend that the consumer bear the tax, and in fact require that the vendor quote the tax separately from the price of the item sold, the taxes are in fact identical in their effect to an indirect retail sales tax levied on the vendor, as there is nothing to prevent the vendor from lowering the pre-tax price of a good or service. It is therefore reasonable to consider whether the entire tax is paid by the consumer.

The question is one which has provided a favorite topic for both price and public finance theorists. In a market where prices are







determined by the free play of the forces of supply and demand, the outcome is indeterminate, even in cases of pure competition, and depends to a great extent on the time horizon considered. This uncertainty is particularly evident in the case of markets characterized by monopolistic competition or oligopoly--if traditional price theory is applied to the analysis of shifting. <sup>26</sup> An analysis of the case of an oligopolistic market with a kinked demand curve, for example, would indicate that the entire tax would be absorbed by factors of production.

A behavioral approach to the problem, --more appropriate to North American market structures, and certainly to retail markets, -- suggests that the entire tax is likely to be shifted forward to the consumer. Due suggests that "so long as each seller knows that other firms will now raise prices by the amount of the tax provided that he does, the point of the kink is moved upward by the amount of the tax, and thus price increases by the amount of the tax occur and are profitable... Standard markup percentage systems . . . simplify <sup>27</sup> shifting, as they encourage uniform treatment of the tax." Due further suggests that "shifting of the exact amount of the tax is greatly facilitated by the practice, which is particularly common with retailers, of charging the tax to the customer as an item separate from the price." <sup>28</sup>

Separate quotation is in fact required by law under provincial sales taxes in Canada.



Although complete forward shifting is the most generally accepted view of retail sales tax incidence, this view of the question has not been universally accepted. The view that the tax is shifted backwards to the suppliers of labour and other factors of production in the form of reduced factor payments has been strongly supported by some students of incidence. Two distinct arguments have been presented in support of this hypothesis. The first, whose best known proponent is E. R. Rolph, rests on the assumption that the tax revenues raised under a sales tax are not expended by government, with the result that aggregate demand falls, shifting the burden of the tax backward in proportion to factor incomes. Another approach, resulting in the same conclusion, rests on the assumption that monetary authorities do not permit an increase in the general price level. Given constant money demand, the introduction of a general sales tax must result in either factor price reductions, or unemployment.

Disagreement among students of incidence on this question results, as Buchanan states, "primarily because they define terms differently and employ somewhat different analytical models in reaching their conclusions." The backward shifting hypothesis is valid under the concept of incidence and the assumptions regarding market



conditions and fiscal and monetary policy employed by its proponents.

Given existing product and factor market conditions, however, the result of the assumption that fiscal and monetary authorities do not permit an increase in aggregate money demand to accommodate a sales tax implies, not a reduction in factor prices, but a reduction in employment. The present study takes the view that such a result should be considered a part of the incidence of fiscal and monetary policy in general, and should not be associated with the incidence of a particular tax. Thus it is here assumed that the burden of sales taxation will be determined by the consumption of taxed commodities, where the tax is levied on consumer goods and services.

The taxation of consumer durables presents a special problem in the analysis of shifting, where, as in the present study, an attempt is made to associate the incidence of the tax with tax receipts. If it is assumed, for example, that the taxation of residential building materials raises the price of new housing, should it not also be assumed that this taxation will result in increases in the price of existing housing, resulting in windfall gains to landlords and house-owners, and a burden on renters, albeit a burden not reflected in tax yields? A similar situation will result from the taxation of new car purchases, which may result in a 'negative' burden on existing car-owners. These price effects





of the introduction of a sales tax are ones which legitimately form a part of our concept of incidence, but they present empirical problems beyond the scope of the present study and are therefore not included in the estimates of incidence developed here.

A further problem, chiefly associated with the taxation of consumer durables, arises as a result of consumer financing of taxable purchases. Where a purchase is financed, with payments being extended over a period of some years, is it reasonable to assume that the individuals bear the entire burden of the tax in the year of purchase, as is implied by the assumption that tax burdens are equivalent to tax receipts? Although the government will receive payment of tax in the year of purchase, the individual will in fact not find his real income reduced by the full amount of the tax in that year, having spread his tax liability over a number of years, along with the initial cost of purchase. This problem will not affect over-all results for groups of taxpaying units, if on balance the group does not increase its net liabilities or reduce its net assets.

The taxation of producer goods and other business expenditures under existing retail sales taxes presents further problems in the measurement of tax shifting. Conceptually, it is assumed that this portion of the tax will be shifted forward to consumers in the same





manner as the tax levied directly on purchase of consumer goods and services.

Certain empirical problems arise, however. Firstly, the present study is designed to measure the incidence on Alberta residents of the introduction of a retail sales tax. But, if it is assumed that businesses shift the tax forward in the price of their products and services, then the burden of the tax on business expenditures will be partially shifted to non-residents through export sales. Only if producers discriminate between their customers on the basis of residence, or if market conditions differ in the export and domestic markets, would this not result. It has therefore been assumed that a portion of the tax levied on business purchases will be shifted to non-residents, and this portion of the tax burden has been excluded from the estimates of incidence on Alberta taxpaying units.

A second problem arises in analysing empirically the shifting of this portion of the tax. The only means by which a precise allocation of this portion of the tax could be made would be to develop an analysis of taxable business expenditures by industry and commodity, requiring the use of detailed input-output techniques. A much simpler procedure has been followed here. It has been assumed that the tax on business expenditures will be shifted forward to consumers in proportion to



total money expenditures. While it is not likely that sales taxes on business expenditures will be distributed proportionately over the production of all goods and services, this assumption would seem to provide the most reasonable basis for an empirical estimate of incidence within the computational capabilities of the present study.



# NOTES

1

E. R. A. Seligman, The Shifting and Incidence of Taxation, 5th ed., reprinted in R. A. Musgrave and C. S. Shoup (eds.), Readings in the Economics of Taxation (American Economic Association; Homewood Ill.: Richard D. Irwin, Inc., 1958), p. 214.

2

R. A. Musgrave, The Theory of Public Finance (New York: McGraw Hill Book Company, 1959), p. 207.

3

Ibid., p. 228.

4

Ibid., p. 224.

5

Under four of the five forms of tax examined, certain expenditures are assumed to be exempt, allowing some adjustment in consumption patterns from taxed to untaxed expenditures. Under the Consumption Tax, all money expenditures are taxed, so that only adjustments in the proportion of income saved would be possible.

6

An equivalent measure of economic welfare could be obtained by converting net worth (non-human capital) to a life annuity and adding to an expected value measure of net life-time income.

7

Considerable discussion of these problems may be found in the recent literature on investment in human capital. See, for example, Gary S. Becker, "Investment in Human Capital: A Theoretical Analysis," Journal of Political Economy, Vol. LXX, part 2, (Special Supplement, Oct. 1962), pp. 9-49.

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B. A. Weisbrod and W. L. Hansen, "An Income-Net Worth Approach to Measuring Economic Welfare," American Economic Review, Vol. LVIII, No. 5, (December, 1968), pp. 1315-1329.

9

N. Kaldor, An Expenditure Tax (London: Allen and Unwin, 1955), Ch. 1.

10

Ibid., p. 47.



11

See Weisbrod and Hansen, loc.cit., p. 1318.

12

Current Canadian attitudes regarding these questions are probably reflected in the comments regarding taxation of consumption and wealth made by the Carter Commission. See, Report of the Royal Commission on Taxation, I (Ottawa: Queen's Printer, 1966), pp. 10-11.

13

J. A. Johnson, The Incidence of Government Revenues and Expenditures ("A Study prepared for the Ontario Committee on Taxation"; Toronto: Queen's Printer, 1968), p. 8.

14

G. R. Conway, The Taxation of Capital Gains ("Studies of the Royal Commission on Taxation, Number 19; Ottawa: Queen's Printer, 1967), p. 273.

15

Johnson, op. cit., p. 10.

16

Ibid., p. 10.

17

The Burden of Canadian Taxation ("Tax Paper No. 19"; Toronto: Canadian Tax Foundation, 1962), p. 4.

18

The Incidence of Taxes and Public Expenditures in the Canadian Economy ("Studies of the Royal Commission on Taxation, Number 2"; Ottawa: Queen's Printer, 1966), Appendix A.

19

Ibid., Tables A-21 and A-22, pp. 225-226.

20

Ibid., Tables A-7 and A-8, pp. 203-204.

21

Dominion Bureau of Statistics, Census of Canada, 1961, Bulletin SX-10 (Ottawa: Queen's Printer, 1967), p. 5.

22

Ibid., p. 5.

23

Dominion Bureau of Statistics, Urban Family Expenditure, 1962 (Ottawa: Queen's Printer, 1967), p. 14.





24

See the discussion of the concept of incidence above. "Burden" is used here in the sense of the effect of a tax on the relative distribution of income. The present study has assumed that these effects correspond to tax payments, but this assumption is not relevant to the present discussion.

25

The best analytical review of the question is given in R. A. Musgrave, The Theory of Public Finance (New York: McGraw-Hill Book Company, 1959), pp. 287-306.

26

Ibid. pp. 299-300.

27

J. F. Due, Government Finance, 3rd edition, (Homewood, Ill.: Richard D. Irwin, Inc., 1963), pp. 269-270.

28

Ibid., p. 270.

29

See E. R. Rolph and G. F. Break, Public Finance (New York: Ronald Press Co., 1961), Ch. 13.

30

For an exposition of this hypothesis, see J. M. Buchanan, The Public Finances (Homewood, Ill.: Richard D. Irwin, Inc., 1965), pp. 460-464.

31

Ibid., p. 461.

32

In The Michigan Tax Study, it was assumed that the tax on business expenditures would be shifted forward on all sales outside Michigan, and on sales inside Michigan where sales were not subject to national competition. It was assumed that where sales are subject to national competition, the burden of the tax would be shifted backward on profits. See R. A. Musgrave and D. W. Daicoff, "Who Pays the Michigan Taxes?", Michigan Tax Study: Staff Papers (Lansing, Mich.: Institute of Public Administration, University of Michigan, 1958), p. 142.



## CHAPTER III

THE EMPIRICAL BASIS FOR THE ESTIMATES OF INCIDENCE

## INCOME ESTIMATES

The personal income measure used adheres to the definition quoted above from the Ontario tax study. This measure differs from the national accounts concept by including interest on consumer debt and 'other money income' (chiefly retirement pensions and annuities),<sup>1</sup> and by excluding transfer payments to institutions.

Where possible the aggregate income totals have been taken from<sup>2</sup> the national accounts estimates of Alberta personal income for 1965. Several items have had to be estimated from Canadian data, and from sources other than the national accounts, because of insufficient detail in the provincial personal income data given in the national accounts, and because of the conceptual differences between the measure used here and the national accounts measure.



The items not taken directly from the national accounts included:

- (1) Employer and Employee Contributions to Social Insurance and Government Pension Funds--Personal income excludes such contributions, but the provincial series given in the national accounts includes them in 'Wages, Salaries, and Supplementary Labour Income'. The Alberta estimate was made on the basis of the ratio of these contributions to personal income for Canada.
- (2) Military Pay and Allowances--No provincial breakdown is provided in the national accounts. The figure used was derived as a residual in the personal income data for Alberta.
- (3) Interest, Dividends, and Net Rental Income--In order to distribute the series as accurately as possible, a breakdown of this figure was required. The Alberta estimates are based on the national accounts total, but the breakdown between money income, imputed interest, imputed rent, and investment income of life insurance companies is based on the breakdown of Canadian data provided for 1961 in the Gillespie study.<sup>3</sup> In addition, it was necessary to add interest on the consumer debt to the national accounts figure. This was also estimated from 1961 Canadian data provided in the Gillespie study.<sup>4</sup>



(4) Transfer payments to individuals-- Transfer payments to institutions must be excluded from total transfer payments given in the national accounts to obtain an estimate of transfer payments to individuals.

It was assumed that transfer payments to institutions formed the same proportion of total transfer payments in Alberta in 1965 as they did in Canada in 1961. The 1961 Canadian breakdown was based on data  
5  
from Gillespie.

(5) Other money income--The Alberta estimate was based on the ratio of 'Other Money Income' for Canada to Canadian money income. The  
6  
Canadian ratio was taken from the 1965 Survey of Incomes.

(6) Imputed Farm Income (food and fuel grown and consumed on farms)--  
The 1958 survey of farm expenditure provided an estimate of this item  
7  
for Prairie families of \$416.70 per family. It was assumed that the value of such consumption would not increase substantially, and the 1958 figure for the Prairies was applied to the estimate of the number of Alberta farm families (excluding unattached individuals) to obtain the 1965 estimate. A similar estimate was obtained by applying the 1961 ratio of Alberta farm families to Canadian farm families, to the 1961  
8  
estimate of imputed Canadian farm income given in the Gillespie study, thus providing a check on the estimate.

Further problems arose in estimating the breakdown of personal income between farm and non-farm family units. The breakdown





was obtained by assuming that all 'net income received by farm operators from farm production', (referred to as 'Net Farm Income' in the income tables given here), was earned by farm family units, and by estimating the portion of other income components accruing to farm family units. The latter estimates were derived from data on Alberta farm family income other than from farm production, contained in the 1958 Farm Survey Report. The 1958 data was extrapolated to 1965 by assuming that the proportion of farm family income from non-farm sources remained constant over the period.

#### DISTRIBUTION OF PERSONAL INCOME BY FAMILY MONEY INCOME CLASS

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Direct estimates of the distribution of the various income components, or of aggregate income, among income classes are not available for Alberta. It was therefore necessary to assume that the various income components are distributed in Alberta similarly to the distribution for the prairie provinces as a whole, and--in the case of military pay, investment income, and 'other money income' --similarly to the Canadian distribution of these components.

The distribution of non-farm income from wages and salaries, non-farm unincorporated business income, and transfer payments



10

was derived from the 1965 Survey of Income data for the Prairies.

Military pay and the investment income of life insurance companies was distributed using the 1961 Canadian distribution given in the Gilles-  
 11  
 pie study. The 1961 distribution of military pay was adjusted to reflect general pay increases between 1961 and 1965 on the basis of changes in the distribution of Canadian wages and salaries between 1961 and 1965. Imputed interest earned by non-farm family units was distributed in accordance with the distribution of Canadian liquid asset  
 12  
 holdings. Imputed rents were allocated by assuming that the proportion of family units, in each income class, owning their own home would correspond with the percentage of Edmonton family units owning their  
 13  
 home, and combining the resulting estimate of home-owners with data on the average equity value of owner-occupied homes, by income  
 14  
 class, for Canada. Money income from investments, and 'other money income' were allocated on the basis of the (unpublished) Canadian distribution derived from the 1965 Survey of Income.

The allocation of farm income to income classes presented a serious problem, as the 1965 Survey of Income provided data for non-farm family units and all family units, but did not provide a separate breakdown for farm family units. It was therefore necessary to derive



farm distributions. The distribution of net income of farm operators from farm production, labelled 'net farm income' in the income tables, was derived by weighting the distribution of unincorporated business income given for all family units and for non-family units in the 1965 Survey of Income, by national accounts estimates of farm unincorporated business income. This assumes that the relative weighting of farm and non-farm income in the 1965 Survey of Income was the same as the actual weighting of these components as reported in the national accounts. It also assumes that the distribution of Alberta farm income by income class was equivalent to the prairie distribution. The derived distribution of net farm income may therefore be subject to a considerable margin of error. However, the resulting estimates of mean income of farm family units by income class, which depend largely on the distribution of this component, appear reasonable relative to the results obtained for non-farm units, and to other studies. The possible exceptions are the \$6,000 to \$6,999 and the \$7,000 to \$7,999 income classes, where mean income appears rather high, (see Table 3.1).

As the imputed distribution of net farm income applied to farm income from non-farm unincorporated business income as well, the same distributive series was used for this component. Imputed interest and rent were distributed in the same way as non-farm income from





TABLE 3.1

## PERSONAL INCOME AND MEAN INCOME PER FAMILY UNIT

## BY FAMILY MONEY INCOME CLASS

## FARM AND NON-FARM FAMILY UNITS

ALBERTA, 1965

| Line  | Family Money Income   |                 |                 |                 |                 |                 |                 |               |             |  |
|---|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------|-------------|--|
|   | Under \$3,000-\$3,000 | \$3,000-\$3,999 | \$4,000-\$4,999 | \$5,000-\$5,999 | \$6,000-\$6,999 | \$7,000-\$7,999 | \$8,000-\$9,999 | Over \$10,000 | ALL CLASSES |  |
| AGGREGATE PERSONAL INCOME (Millions of Dollars) |                       |                 |                 |                 |                 |                 |                 |               |             |  |
| 1. Non-Farm Units                               | 234.0                 | 146.5           | 210.5           | 286.5           | 309.0           | 243.6           | 382.4           | 572.8         | 2385.5      |  |
| 2. Farm Units                                   | 59.4                  | 56.4            | 33.3            | 48.2            | 48.7            | 33.1            | 61.6            | 102.8         | 443.5       |  |
| 3. All Units                                    | 293.4                 | 202.9           | 243.8           | 334.7           | 357.7           | 276.7           | 444.0           | 675.6         | 2829.0      |  |
| PERSONAL INCOME PER FAMILY UNIT (Dollars)       |                       |                 |                 |                 |                 |                 |                 |               |             |  |
| 4. Non-Farm Units                               | 2,197                 | 4,486           | 5,702           | 6,670           | 7,842           | 8,687           | 10,459          | 17,929        | 6,720       |  |
| 5. Farm Units                                   | 2,051                 | 4,463           | 5,353           | 6,062           | 8,264           | 9,600           | 10,782          | 18,416        | 5,804       |  |
| 6. All Units                                    | 2,166                 | 4,480           | 5,651           | 6,575           | 7,897           | 8,787           | 10,502          | 18,002        | 6,558       |  |

Note: Details may not add due to rounding.

Source: Tables A-2 and 3.2.





these sources. Imputed income from food and fuel produced and consumed on farms was distributed in proportion to total family units in each income class. All other components of farm income were obtained as residuals, that is, the income of all family units was distributed using the same sources and methods used for non-farm families, and the farm distribution was obtained by deducting the non-farm estimate from the total figure.

The estimates of aggregate personal income, by family money income class, and of mean income per family unit, are given in Table 3.1.

### THE DISTRIBUTION OF FAMILY UNITS

Estimates of the distribution of family units by money income class were required in developing the distribution of expenditure, (see discussion below), and in developing the distributive series for imputed rents and imputed farm income. Table 3.2 gives the estimated distribution of farm and non-farm family units.



TABLE 3.2FARM AND NON-FARM FAMILY UNITS, BY FAMILY MONEY INCOMEALBERTA, 1965

| Family Money<br>Income Class | Non-Farm<br>Family Units | Farm<br>Family Units | All<br>Family Units |
|------------------------------|--------------------------|----------------------|---------------------|
| Under \$3, 000               | 106, 493                 | 28, 962              | 135, 455            |
| \$3, 000-3, 999              | 32, 658                  | 12, 637              | 45, 295             |
| \$4, 000-4, 999              | 36, 918                  | 6, 221               | 43, 139             |
| \$5, 000-5, 999              | 42, 952                  | 7, 951               | 50, 903             |
| \$6, 000-6, 999              | 39, 402                  | 5, 893               | 45, 295             |
| \$7, 000-7, 999              | 28, 043                  | 3, 448               | 31, 491             |
| \$8, 000-9, 999              | 36, 563                  | 5, 713               | 42, 276             |
| Over \$10, 000               | 31, 948                  | 5, 582               | 37, 530             |
| ALL CLASSES                  | 354, 977                 | 76, 407              | 431, 384            |

Source: See text.

Estimates of total family units were based on separate estimates of the number of economic families and of unattached individuals.

Of the 431, 384 family units, economic families comprised 322, 146, and unattached individuals comprised 109, 238. The number of

economic families was estimated using the D. B. S. estimate of the

15

number of census families in the Prairies for 1965. An estimate

of economic families for the Prairies was made assuming that the

ratio of census to economic families remained constant between 1961



and 1965. The Prairie estimate of economic families was lower, relative to population, than in 1961. The decline in this ratio (economic families : population) for the Prairies was therefore applied to the 1961 Alberta ratio of economic families to population, to estimate a 1965 Alberta ratio. This ratio was then applied to the 1965 Alberta population figure to obtain the estimate of 322, 146 economic families in 1965. The estimate of the number of farm economic families, 55, 654, was then broken out of the total on the basis of the 1966 ratio of farm households to total Alberta households.<sup>16</sup>

The estimate of unattached individuals, that is persons not in economic families, was obtained as a residual from the population total, after estimating the number of persons in economic families. The latter estimate was obtained in a manner analagous to that used for estimating the number of economic families, on the basis of 1965 estimates of the number of persons in census families in the Prairies. The farm estimate, 20, 753, was broken out of total unattached individuals on the basis of single farm persons over twenty years of age in 1966 as a per cent of all Alberta single persons over twenty years of age.<sup>17</sup>

The distributions of all family units and of non-farm family units, by money income class, were taken directly from data provided in the 1965 Survey of Income. The farm distribution was then obtained



as a residual.

### ESTIMATES OF TAX YIELD

The absolute yield of a tax yield is not of course of paramount interest in the study of tax incidence--the essential consideration is the relative burden of the tax on family units in the various income classes. Under the assumptions followed in the present study, however, it is necessary to know the proportion of tax revenues obtained through the taxation of business expenditures compared to revenues obtained through the taxation of consumer goods and services. It has been assumed that the former portion of the tax will be borne in relation to total consumer expenditures, while the latter portion will be borne in relation to taxable consumer expenditure.

As data on absolute yields is of interest per se, quite apart from its significance in the estimation of incidence, estimates of tax yield have been made for all forms of the tax examined.

In estimating potential tax yields, it has been assumed that a 5 per cent tax rate is applied, except in the case of the Ontario Tax, where it has been assumed that a 10 per cent rate is applied to amusement admissions, meals, and liquor purchases. In all cases 1965 calendar year estimates of revenue were made.





The Consumption Tax: The yield of this form of tax can be computed simply by applying the tax rate to total consumer money expenditure on goods and services. As the national accounts do not provide estimates of consumer expenditure on a regional basis, an estimate of consumer money expenditure must be developed for Alberta.

One method of estimating consumer money expenditure is that of multiplying estimated average expenditure per family unit by the estimated number of family units. In view of the potential error which could result from any inaccuracy in the estimates of either absolute expenditure per family unit, or number of family units, however, it seemed preferable to estimate money expenditure from aggregate data.

The method used was to estimate aggregate Alberta consumer expenditure from national accounts estimates of Canadian consumer expenditure.<sup>18</sup> Using a 1961-1966 base, Canadian consumer expenditures on goods and services were related to Canadian personal disposable income,<sup>19</sup> and the average ratio of expenditures to income<sup>20</sup> was applied to Alberta personal disposable income in 1965 to obtain an estimate of Alberta consumer expenditure in 1965 of \$2,424 millions. Again using Canadian data, it was assumed that 5.7 per cent



of total consumer expenditures were imputed, and an estimate of consumer money expenditures in 1965 of \$2,286 was obtained.

The proportion of the tax allocated to farm family units was, however, based on the detailed expenditure estimates obtained from the 1964 urban expenditure survey. The weighted (by number of family units) estimates of average expenditure derived from the expenditure survey yield an estimate of farm money expenditure as a proportion of total money expenditure of 14.8 per cent, which was used to estimate the tax burden on farm family units.

The Food-Exempt Tax: The detailed expenditure data indicated money food expenditures for all units were equal to 22.8 per cent of total money expenditures. Applying this figure to total consumer money expenditures gave an estimate of money food expenditure of \$521 million, and an estimate of consumer money expenditures excluding food of \$1,765 million, for an estimated yield at 5 per cent of \$88.25 millions.

The detailed expenditure estimates indicated that farm money expenditures excluding food represented 15.7 per cent of total non-food money expenditures, and this percentage was applied to give an estimate of the yield from farm family units.

The Average Tax: An estimate of the yield of this form of the



tax is both more difficult than in the case of the two previous taxes, and more critical, as a significant portion of the tax is paid by business on business purchases. The estimate was obtained by preparing detailed estimates of the tax base for the following major types of taxable expenditures: retail sales, construction materials, machinery and equipment, local telephone charges, hotel and motel accommodation, meals, and liquor sales of service establishments.

The taxable proportion of retail sales was estimated on the basis of data from the 1961 census on retail sales by main commodity lines.<sup>22</sup> It was assumed that all sales of food, tobacco, children's clothing, repairs and services supplied by retail outlets, prescribed medicines, newspapers, magazines, and books, farm supplies, fuel oil, and meals were 100 per cent exempt. (Receipts from sales of meals and lunches were excluded at this stage because they were included as a separate item in the calculations.) Gas, oil, and grease sales, (combined in the census data), were examined in detail by type of business, and various proportions assumed exempt according to assumptions regarding the proportion of gasoline sales in the total for each type of business.

It was estimated that 58.9 per cent of retail sales would be taxable, and this ratio was applied to 1965 Alberta retail sales of



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\$1,600 million to give an estimate of taxable sales of \$942.7 million. 1961 Census data on retail sales by type of customer were also utilized to provide an estimate that 5.8 per cent of retail sales  
24  
are made to business, and this ratio was used to estimate the portion of the yield from retail sales paid by business.

The estimate of taxable sales of construction material was based on data on the total value of construction in Alberta in 1965,  
25  
by type of construction, combined with an estimate of material  
26  
costs as a proportion of the total value of construction. Excluding expenditures for construction of churches and hospitals, the total value of construction in Alberta in 1965 was \$1,067.5 million. Applying the estimate of material costs as a per cent of total value, 46.6 per cent, to this figure, taxable construction material expenditures were estimated at \$497.5 million.

As the data relate to investment expenditures, the entire yield has been assumed paid by business. An obvious criticism of this treatment can be made. The taxation of construction materials under the Average Tax includes the taxation of materials used in residential and institutional construction. Although residential construction is included in investment in the national accounts, it is in fact similar to consumer durables, and does not form a part of produc-







tion costs of business. It would therefore be preferable, from a conceptual point of view, to allocate the burden of the tax on residential construction in accordance with consumer housing expenditures, rather than allocating the burden in accordance with total consumer expenditures.

Several empirical problems preclude this treatment, however. Firstly, no data is available on purchases of new housing which could be used to segregate the burden between home-purchasers and renters. Secondly, the consumer expenditure survey data excludes payments for housing purchases, so that no data is available for allocating the burden on new home buyers.

The most significant barrier to allocating the burden in accordance with housing expenditures arises from the problems associated with tax shifting analysis in the case of consumer durables noted above. It would be inconsistent, even if it were possible, to assume that the taxation of residential construction materials results in an increase in the cost of new housing only. In fact, all housing costs, including rental values and prices of existing housing, could be expected to rise as a result of the taxation of residential construction materials. The burden cannot be associated solely with buyers and renters of new homes. For these reasons, the tax was included in the business sector with taxes on other construction materials.



The taxation of institutional construction also presents a problem. Depending on the financing of particular institutions, the tax burden could be passed forward in higher charges for institutional services, or backward to the supporters of the institution, chiefly governments. In the former case, the inclusion of the tax in the business sector and consequent allocation in accordance with total expenditure is not unreasonable. In the latter case, however, the burden could be assumed to result in higher general tax levies by government, and the burden should be allocated in accordance with over-all tax incidence. In the absence of a general study of tax incidence, the former treatment was mandatory.

The yield of the tax on machinery and equipment purchases was estimated from budget estimates of the yield from this source in Ontario in 1969.<sup>27</sup> The Ontario yield as a per cent of total investment in machinery and equipment was applied to Alberta data for 1965, to give a direct estimate of the yield of the tax from this source. Differences in the structure of Ontario and Alberta investment, as well as the fact that the Ontario figure is only a budget estimate, suggest the possibility of a substantial error margin in the estimate. The total value of machinery and equipment investment in Alberta in 1965 was \$570.8 million.<sup>28</sup> Assuming that 50 per cent of the total



value was material costs, the tax base would have been \$285.4 million, whereas the estimate based on Ontario revenues implies a tax base of only \$136.0 million. Because no data is available on the material content of machinery and equipment investments, and a breakdown of farm equipment investment (which is exempt) is not available, it was decided to utilize the latter estimate.

Local telephone charges were taken directly from data published in Telephone Statistics, 1965.<sup>29</sup> The estimate of the portion of the tax paid by business was based on unpublished Dominion Bureau of Statistics estimates of revenue for all telephone systems other than the Bell system, which indicate that 42 per cent of revenue is obtained from business subscribers. This has been rounded to 40 per cent in the estimate made here.

Estimates of the base of the tax on meals were based on:

- (1) 1961 census estimates of sales of meals by eating places,<sup>30</sup> excluding hotels, extrapolated to 1965 on the basis of retail sales growth;
- (2) sales of meals and lunches by retail establishments, obtained from the 1961 census data on retail sales by commodity; and,<sup>31</sup>
- (3) expenditure on meals in hotels.





An attempt to recognize the \$1.00 exemption was made by including in the tax base 75 per cent of sales by eating places, 25 per cent of sales by retail establishments, and 90 per cent of sales by hotels. The portion of the tax allocated to business was based on unpublished estimates used by the Dominion Bureau of Statistics in national accounts calculations which assume 16 per cent of meal expenditures to be made by business.

Expenditures for hotel accomodation were taken directly from published data on hotel receipts, <sup>32</sup> while estimates of motel accom-  
modation expenditures were based on 1961 census data, <sup>33</sup> extrapolated to 1965 on the basis of growth in hotel receipts. It was assumed that 25 per cent of the yield from this source would be paid by business.

Liquor sales of hotels were again obtained directly from published data on hotel receipts, however no data is available on liquor sales of cocktail lounges. A rough estimate of \$5.0 millions was included in the tax base. The tax allocated to business was based on unpublished estimates used in the national accounts which assume 7.5 per cent of these expenditures are made by business.

The Ontario Tax: Estimates of yield were in most respects based on the same data used for estimating the yield of the Average





Tax, with the following exceptions:

- (1) Meals, amusement admissions, and liquor sales were assumed taxed at 10 per cent, rather than a 5 per cent rate.
- (2) The construction materials base was reduced to take account of the Ontario exemption of construction materials used for municipal and other institutional construction.
- (3) To allow for the \$2.50 exemption on meals under the Ontario Tax, 50 per cent of sales by eating places, and 75 per cent of sales by hotels were included in the base, while sales of meals and lunches by retail establishments were excluded from the base entirely.
- (4) An estimate of the tax base for the tax on amusement admissions<sup>34</sup> was made from 1961 census data, extrapolated to 1965 on the basis of growth in personal income.

The Carter Tax: The report of the Royal Commission on Taxation provided estimates of the tax liability of individual family units in the various income classes under the form of sales tax<sup>35</sup> recommended by the Commission at a 7 per cent rate. The yield of this form of tax was obtained simply by adjusting these estimates for a 5 per cent rate, and applying the estimates of tax liability to the number of units in each income class in Alberta. This gave an



estimate of tax revenues of \$88.86 million.

## THE TAX DISTRIBUTION BASES

As outlined previously, it was initially assumed that the effect of a tax on real income distribution can be measured by assuming that the aggregate reduction in real incomes resulting from the imposition of the tax, or tax burden, will correspond with tax revenues. The tax burden for each of the forms of sales taxation examined in Chapter IV is distributed on the basis of a distributive series developed for each form of tax from data on consumption patterns. The source of the consumer expenditure data was unpublished data from the 1964 Dominion Bureau of Statistics survey of urban family expenditure. The survey provides expenditure data for 152 Edmonton families and unattached individuals, and is therefore subject to substantial sampling error. In order to minimize this error, the data was regrouped from twelve income classes to the eight income classes shown in the expenditure tables in the Appendix.

The estimates assumed that all Alberta family units, with given income levels, have expenditure patterns similar to those of Edmonton family units. To the extent that this is not a valid assumption, then, the results may not be valid. For the majority of urban



family units, however, the assumption is not an unreasonable one. In the case of rural family units, however, it is reasonable to question whether expenditure patterns would be similar to those of Edmontonians, and the estimates may therefore not be completely representative of this group of residents.

The farm expenditure data was derived from the data on urban expenditure patterns in the following way: average propensity to consume was calculated for each urban income class, and this average applied to farm income in that class to calculate farm consumption by income class. This procedure was necessary because average income in each income class was not the same for urban and farm family units. Money expenditures of farm family units were then calculated by deducting the estimate of farm-produced and consumed food and fuel used in the income estimates from total expenditure.

Estimates of the distribution of tax burden were prepared for four forms of retail sales tax. In each case estimates were prepared separately for farm and non-farm family units, and the estimate for all family units obtained by combining these estimates. The incidence of the Carter Tax was taken directly from estimates prepared by the Royal Commission on Taxation, as data limitations made a direct estimate of incidence for Alberta impossible.





The distribution of the Consumption Tax burden was made in accordance with the distribution of total money expenditure obtained for urban family units from the 1964 urban family expenditure survey data, and derived for farm family units. The distribution of tax burdens under the Food-Exempt Tax was made in accordance with the distribution of total non-food money expenditures.

The distribution of tax burdens under the Average Tax was made in two stages. That part of the tax revenues derived directly from expenditures by persons was allocated on the basis of an estimate for each income class of the proportion of total money expenditures made for goods and services subject to tax. Expenditures for taxable goods and services were assumed to include: 10 per cent of expenditure for owned shelter; 100 per cent of expenditures for household operation, furnishings and equipment, and car purchases; 80 per cent of clothing expenditures; 70 per cent of recreation expenditure; 55 per cent of personal care expenditure; 40 per cent of tobacco and alcohol expenditure; and 20 per cent of car operation, other transportation, and miscellaneous expenditures. The proportion of each type of expenditure included, where the expenditure was not assumed either wholly taxable or wholly exempt,





was determined on the basis of a detailed commodity breakdown of expenditure for Edmonton families of 2-6 persons with incomes between \$3,000 and \$8,000, for 1962.<sup>38</sup> It is assumed that the proportion of taxable to non-taxable expenditures is constant throughout all income classes for each major type of expenditure. As both food and fuel expenditures are exempt under the Average Tax, it was assumed that the ratio of taxable consumption to total consumption would be the same for farm family units as for non-farm units.

Many refinements could be made in the estimate of taxable expenditures given a more detailed survey of expenditure patterns. For example, all food expenditures have been assumed exempt in developing the distributive series, which does not recognize the taxation of meals. Similarly, all household operation expenses have been assumed taxable, although cleaning expenses included in household operation would in fact be exempt. The assumption that taxable expenditure forms a constant proportion of expenditure in each major category throughout the income range is potentially even more distorting. For example, recreation expenditures include social club dues, which are exempt under the Average Tax. In determining the proportion of recreation expenditures included in taxable consumption, the average expenditure (of families of 2-6 persons with 1962 incomes



between \$3, 000 and \$8, 000), for social club dues has been excluded, but the same proportion of recreation expenditure is excluded for family units in all income classes. It would not be expected that these expenditures would in fact be constant, as a proportion of recreation expenditures, throughout the income range.

In the absence of detailed expenditure data by income class, it is impossible to determine whether these problems result in a consistent bias in the estimates of taxable consumption.

In the second stage of distributing tax burdens under the Average Tax, the portion of the tax paid initially by businesses was distributed on the basis of the distribution of total money expenditures, after deducting an estimate of the portion of the tax which would be shifted to non-residents. The burdens calculated in each stage were then combined to obtain the estimate of incidence of the entire tax.

The distribution of the Ontario Tax was again obtained by first estimating the distribution of the portions of the tax paid directly by individuals and of the tax paid on business purchases separately, and then combining these distributions to obtain the overall estimate of incidence. In estimating the distribution of taxable consumer expenditure under the Ontario Tax structure, the same assumptions were followed as those used in estimating taxable consumption under



the Average Tax, except that 80 per cent of tobacco and alcohol expenditures were included, rather than 40 per cent, to reflect the 10 per cent rate levied on alcohol purchases under the Ontario Tax. It was not possible to reflect the higher tax levy on meals and amusement admissions under the Ontario Tax, as the expenditure survey did not provide data on the distribution of these expenditures.

The most significant effect of the Ontario Tax structure is the reduced relative significance of business taxation under the Ontario Tax, as compared to the Average Tax. Under the Average Tax, 42 per cent of revenues are obtained from the taxation of business expenditures, while under the Ontario Tax, this proportion is reduced  
39  
to 37 per cent.



## NOTES

1

For a definition of the national accounts concept, see Dominion Bureau of Statistics, National Accounts, Income and Expenditure, 1926-1956 (Ottawa: Queen's Printer, 1958), pp. 110-116.

2

Dominion Bureau of Statistics, National Accounts, Income and Expenditure, 1966 (Ottawa: Queen's Printer, 1967), Tables 28-35.

3

W. I. Gillespie, The Incidence of Taxes and Public Expenditures in the Canadian Economy ("Studies of the Royal Commission on Taxation, No. 2"; Ottawa: Queen's Printer, 1966), Table A-4, p. 201, lines 6, 10, 11, 12.

4

Ibid.

5

Ibid., line 8.

6

Dominion Bureau of Statistics, Income Distributions by Size in Canada, 1965 (Ottawa: Queen's Printer, 1968), Table 20, p. 36.

7

Dominion Bureau of Statistics, Farm Family Living Expenditure, 1958 (Ottawa: Queen's Printer, 1966), p. 24.

8

Gillespie, op. cit., Table A-4, p. 201, line 13.

9

Dominion Bureau of Statistics, Farm Survey Report Number 1, Expenditure, Receipts, and Farm Capital (Ottawa: Queen's Printer, 1962), Table 12-10.

10

A detailed description of the estimating procedures used in distributing income, and of data sources, is given in the notes to Table A-1 in the Appendix.

11

Gillespie, op. cit., Table A-4, p. 201, lines 2 and 12.







12

Dominion Bureau of Statistics, Incomes, Assets and Indebtedness of Non-Farm Families in Canada, 1963 (Ottawa: Queen's Printer, 1966), Table 62.

13

Provided in unpublished data from a survey of urban expenditure in 1964 made by the Dominion Bureau of Statistics.

14

Incomes, Assets and Indebtedness of Non-Farm Families, Table 30.

15

Dominion Bureau of Statistics, Estimates of Families in Canada, 1965 (Ottawa: Queen's Printer, 1966), Table 1.

16

Dominion Bureau of Statistics, Census of Canada, 1966, Bulletin 2-3 (Ottawa: Queen's Printer, 1968), Table 9.

17

Ibid., Bulletin 1-13, Table 34.

18

Dominion Bureau of Statistics, National Accounts, Income and Expenditure, 1966 (Ottawa: Queen's Printer, 1967), Table 47.

19

Ibid., Table 3.

20

Ibid., Table 30.

21

Ibid., Table 49.

22

Dominion Bureau of Statistics, Census of Canada, 1961, Bulletin 6.1-7 (Ottawa: Queen's Printer, 1966), Tables 23 and 26.

23

Dominion Bureau of Statistics, Retail Trade, January, 1967 (Ottawa: Queen's Printer, 1967), Table 10.

24

Census of Canada, 1961, Bulletin 6.1-5 (Ottawa: Queen's Printer, 1965), Table I.

25

Dominion Bureau of Statistics, Construction in Canada, 1965-67 (Ottawa: Queen's Printer, 1967), Table 26.

26

Ibid., Table 7.



27

Government of Ontario, Ontario Budget, 1969 (Toronto: Department of Treasury and Economics, 1969), p. 28.

28

Dominion Bureau of Statistics, Public and Private Investment in Canada, Outlook, 1967 (Ottawa: Queen's Printer, 1967), Table 21.

29

Dominion Bureau of Statistics, Telephone Statistics, 1965 (Ottawa: Queen's Printer, 1967), Table 18.

30

Census of Canada, 1961, Bulletin 6.2-10, (Ottawa: Queen's Printer, 1965), Table 39.

31

Dominion Bureau of Statistics, Hotels 1965 (Ottawa: Queen's Printer, 1968), Table 5.

32

Ibid., Table 5.

33

Census of Canada, 1961, Bulletin 6.2-10, Table 39.

34

Ibid.

35

Report of the Royal Commission on Taxation, VI (Ottawa: Queen's Printer, 1966), Table E-2, p. 284.

36

The non-farm series is given in the Appendix, Table A-1, line 18; the farm series in Table A-1, line 22.

37

The non-farm series is given in the Appendix, Table A-1, line 19; the farm series in Table A-1, line 23.

38

Dominion Bureau of Statistics, Urban Family Expenditure, 1962 (Ottawa: Queen's Printer, 1967), Table 10.

39

See Appendix, Table A-6.



## CHAPTER IV

### ESTIMATES OF RETAIL SALES TAX INCIDENCE

Estimates of retail sales tax burdens as a per cent of personal income,<sup>1</sup> derived from the methods and assumptions given in Chapters II and III, are set forth in Table 4.1. The table presents results for the five forms of retail sales tax examined in the study, and presents separate estimates for non-farm and farm family units. It was not possible to provide a breakdown of tax liabilities between farm and non-farm family units for the Carter Tax.

In order to simplify the interpretation of the results, the data has been re-cast in Table 4.2 in index form, relating tax payments as a per cent of income for each group and income class to the average rate for all units. This procedure reduces the results for each form of the tax to a common-yield basis, as well as simplifying the analysis of the incidence of the tax throughout the income range. In this form, a progressive tax would give indices increasing throughout the income



TABLE 4.1

## TAX PAYMENTS AS A PER CENT OF PERSONAL INCOME

## SELECTED RETAIL SALES TAX STRUCTURES, ALBERTA, 1965

| Line            | Tax Structure  | Family Money Income----- |                   |                   |                   |                   |                   |                   |     |     |  | Over<br>\$10,000<br>CLASSES |
|-----------------|----------------|--------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-----|-----|--|-----------------------------|
|                 |                | Under<br>\$3,000         | \$3,000-<br>3,999 | \$4,000-<br>4,999 | \$5,000-<br>5,999 | \$6,000-<br>6,999 | \$7,000-<br>7,999 | \$8,000-<br>9,999 |     |     |  |                             |
| CONSUMPTION TAX |                |                          |                   |                   |                   |                   |                   |                   |     |     |  |                             |
| 1.              | Non-Farm Units | 5.0                      | 4.9               | 4.3               | 4.6               | 5.0               | 4.2               | 3.8               | 2.8 | 4.1 |  |                             |
| 2.              | Farm Units     | 4.0                      | 4.5               | 4.0               | 4.2               | 4.7               | 4.0               | 3.6               | 2.7 | 3.8 |  |                             |
| 3.              | All Units      | 4.8                      | 4.8               | 4.3               | 4.5               | 4.9               | 4.2               | 3.8               | 2.8 | 4.0 |  |                             |
| FOOD EXEMPT TAX |                |                          |                   |                   |                   |                   |                   |                   |     |     |  |                             |
| 4.              | Non-Farm Units | 3.5                      | 3.7               | 3.1               | 3.4               | 3.8               | 3.3               | 3.0               | 2.2 | 3.1 |  |                             |
| 5.              | Farm Units     | 3.4                      | 3.7               | 3.1               | 3.4               | 3.8               | 3.2               | 3.0               | 2.2 | 3.1 |  |                             |
| 6.              | All Units      | 3.5                      | 3.7               | 3.1               | 3.4               | 3.8               | 3.3               | 3.0               | 2.2 | 3.1 |  |                             |
| AVERAGE TAX     |                |                          |                   |                   |                   |                   |                   |                   |     |     |  |                             |
| 7.              | Non-Farm Units | 2.5                      | 2.9               | 2.5               | 2.9               | 3.4               | 2.8               | 2.7               | 2.1 | 2.7 |  |                             |
| 8.              | Farm Units     | 2.3                      | 2.8               | 2.4               | 2.8               | 3.4               | 2.8               | 2.7               | 2.1 | 2.6 |  |                             |
| 9.              | All Units      | 2.5                      | 2.9               | 2.5               | 2.9               | 3.4               | 2.8               | 2.7               | 2.1 | 2.7 |  |                             |
| ONTARIO TAX     |                |                          |                   |                   |                   |                   |                   |                   |     |     |  |                             |
| 10.             | Non-Farm Units | 2.8                      | 3.2               | 2.7               | 3.2               | 3.8               | 3.1               | 3.0               | 2.3 | 2.9 |  |                             |
| 11.             | Farm Units     | 2.6                      | 3.0               | 2.6               | 3.1               | 3.8               | 3.1               | 3.0               | 2.2 | 2.8 |  |                             |
| 12.             | All Units      | 2.7                      | 3.1               | 2.7               | 3.1               | 3.8               | 3.1               | 3.0               | 2.3 | 2.9 |  |                             |
| CARTER TAX      |                |                          |                   |                   |                   |                   |                   |                   |     |     |  |                             |
| 13.             | All Units      | 3.2                      | 3.0               | 2.7               | -----3.0-----     |                   | -----3.2-----     |                   | 3.4 | 3.1 |  |                             |

Source: Derived from Tables A-2 and A-5.





TABLE 4.2

## STANDARDIZED INDICES OF TAX BURDEN

## SELECTED RETAIL SALES TAX STRUCTURES, ALBERTA, 1965

| Line            | Tax Structure  | Family Money Income |                |                |                |                |                |                |               |     |  | ALL CLASSES |
|-----------------|----------------|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|-----|--|-------------|
|                 |                | Under \$3,000       | \$3,000- 3,999 | \$4,000- 4,999 | \$5,000- 5,999 | \$6,000- 6,999 | \$7,000- 7,999 | \$8,000- 9,999 | Over \$10,000 |     |  |             |
| CONSUMPTION TAX |                |                     |                |                |                |                |                |                |               |     |  |             |
| 1.              | Non-Farm Units | 122                 | 122            | 106            | 113            | 123            | 104            | 94             | 70            | 101 |  |             |
| 2.              | Farm Units     | 98                  | 111            | 98             | 105            | 117            | 100            | 90             | 68            | 95  |  |             |
| 3.              | All Units      | 117                 | 118            | 106            | 112            | 123            | 103            | 94             | 70            | 100 |  |             |
| FOOD EXEMPT TAX |                |                     |                |                |                |                |                |                |               |     |  |             |
| 4.              | Non-Farm Units | 114                 | 118            | 101            | 109            | 124            | 105            | 97             | 72            | 100 |  |             |
| 5.              | Farm Units     | 110                 | 118            | 100            | 108            | 123            | 104            | 97             | 72            | 100 |  |             |
| 6.              | All Units      | 112                 | 118            | 101            | 109            | 123            | 104            | 97             | 72            | 100 |  |             |
| AVERAGE TAX     |                |                     |                |                |                |                |                |                |               |     |  |             |
| 7.              | Non-Farm Units | 95                  | 110            | 94             | 109            | 129            | 106            | 103            | 78            | 100 |  |             |
| 8.              | Farm Units     | 87                  | 106            | 91             | 105            | 127            | 106            | 102            | 77            | 97  |  |             |
| 9.              | All Units      | 93                  | 108            | 94             | 108            | 129            | 106            | 103            | 78            | 100 |  |             |
| ONTARIO TAX     |                |                     |                |                |                |                |                |                |               |     |  |             |
| 10.             | Non-Farm Units | 95                  | 109            | 94             | 109            | 132            | 108            | 103            | 78            | 101 |  |             |
| 11.             | Farm Units     | 88                  | 105            | 91             | 106            | 130            | 106            | 102            | 77            | 98  |  |             |
| 12.             | All Units      | 93                  | 107            | 93             | 108            | 131            | 107            | 102            | 78            | 100 |  |             |
| CARTER TAX      |                |                     |                |                |                |                |                |                |               |     |  |             |
| 13.             | All Units      | 102                 | 94             | 87             | -----96-----   | -----101-----  |                |                | 108           | 100 |  |             |



range, with lower income classes having indices of less than 100, and upper income classes having indices above 100; a proportional tax would give indices of exactly 100 in all income classes; and a regressive tax would give indices starting above 100 in the lower income classes and declining throughout the income range.

Table 4.2 indicates that none of the selected forms of retail sales tax are consistently either progressive or regressive throughout the income range. The Consumption Tax, which would tax all purchases of consumer goods and services, is found to be regressive throughout the income range, with the exception of the \$5,000 to \$6,999 brackets, where the tax is progressive, and the first two income brackets, where the tax is almost proportional. The pattern of incidence on farm family units is similar to that for non-farm units, except in the case of the first two income brackets, which are progressive in the case of farm units. The lower effective tax burden borne by farm units results from the consumption of home-produced food and fuel by farm families, which would not bear any tax. The table indicates that, on average, farm units would pay an effective rate of tax, (as a per cent of income), 5 per cent below that paid by all Alberta families and unattached individuals.

The pattern of incidence under the Food-Exempt Tax is similar to that where food is taxed, but the degree of regressivity is lower, and



the tax is progressive over the first two income brackets. With food purchases exempt, farm units escape tax only on home-produced fuel, and therefore bear an effective tax burden almost identical to that borne by non-farm units.

The incidence of the Average Tax is progressive through income levels below \$7,000, with the exception of the \$4,000 to \$4,999 bracket, and regressive beyond that level. The degree of progressivity is much more marked in the lower income levels than in the case of the Consumption and Food-Exempt Taxes, however, and the degree of regressivity in the upper income levels is reduced. This is true for the Food-Exempt Tax largely as a result of the exemption of most expenditures for shelter, fuel, and utilities. Again, the effective burden on farm units is lower than that on non-farm units. This results from the fact that the portion of the tax borne initially by business is assumed to be distributed in accordance with money expenditures, with the result that farm units again enjoy an advantage over non-farm units as a result of the consumption of farm-produced food and fuel.

Although the absolute burden of the Ontario Tax is considerably greater than that of the Average Tax, (Table 4.1), the pattern of incidence is virtually identical to it. This is perhaps not surprising, as the most significant difference between the two taxes is the higher rate





levied on alcohol purchases under the Ontario Tax, which do not form a major part of consumer expenditures.

The pattern of incidence of the retail sales tax recommended by the Carter Commission is almost exactly opposite to that of existing provincial retail sales taxes. It is regressive through income levels up to \$7,000, and progressive beyond that level. This is a point not clearly indicated in the Report of the Commission, resulting from the fact that the Commission compared the incidence of the recommended retail sales tax to that of the existing federal manufacturers' tax, and from the fact that comparisons were made in terms of absolute dollar tax liabilities. As the yield of the recommended tax was some 8 per cent below that of the existing manufacturers' tax, and the manufacturers' tax is itself regressive, the dollar comparison tended to obscure the true incidence of the tax. For example, in the case of family units with income less than \$2,000, the Commission indicated that under the recommended tax, tax liability would be \$2.00 less than under the existing federal tax.<sup>2</sup> But had the tax yields been identical, tax liability under the proposed tax would have actually been \$4.00 greater than under the manufacturers' tax.

These results must be interpreted with due regard for the limitations of the basic data used in preparing the estimates lest the apparent





precision of the numerical estimates be misconstrued. The sources and assumptions used in developing the estimates were outlined in the previous Chapter. The most likely sources of error in the estimates of incidence arise from the small sampling base used in the expenditure estimates; the assumption that expenditure patterns of all Alberta families and unattached individuals in given income classes are similar to those of Edmonton residents; and from the use of prairie data to distribute family units by income classes.

Absolute errors need not necessarily influence the results, of course, so long as the error is distributed proportionately over the entire income range. Some indication that the error is not so distributed in the case of the expenditure estimates is given in Table 4.3. The table gives estimates, derived from the urban family expenditure survey data, of average propensity to consume for each money income class. Given a progressive income tax structure, and standard assumptions regarding consumer behavior, one would expect consumption to decline as a proportion of income with increasing income levels. Two income levels, the \$4,000 to \$4,999 and the \$6,000 to \$6,999 classes, do not appear to exhibit the expected behavior. Average propensity to consume would appear to be too low in the former class, and too high in the latter class.



TABLE 4.3

CONSUMPTION AS A PER CENT OF MONEY INCOMEFAMILIES AND UNATTACHED INDIVIDUALS, EDMONTON, 1964

| Family<br>Money<br>Income | Average<br>Money<br>Income | Average<br>Money<br>Expenditure | Consumption<br>as a per cent of<br>Money Income |
|---------------------------|----------------------------|---------------------------------|---|
| Under \$3, 000            | \$1, 716                   | \$1, 744                        | 101.6   |
| \$3, 000-3, 999           | 3, 674                     | 3, 534                          | 96.2  |
| \$4, 000-4, 999           | 4, 455                     | 3, 960                          | 88.9  |
| \$5, 000-5, 999           | 5, 531                     | 4, 883                          | 88.3  |
| \$6, 000-6, 999           | 6, 550                     | 6, 254                          | 95.5  |
| \$7, 000-7, 999           | 7, 472                     | 5, 882                          | 78.7  |
| \$8, 000-9, 999           | 8, 826                     | 6, 396                          | 72.5  |
| Over \$10, 000            | 12, 266                    | 8, 180                          | 66.7  |

Source: Unpublished data from The Dominion Bureau of Statistics 1964 Survey of Urban Family Expenditure.

The above data suggests that the estimated tax burden on units in the \$4, 000 to \$4, 999 income bracket may well be too low, while the tax burden on units in the \$6, 000 to \$6, 999 bracket may well be high. This would help to explain the apparent capriciousness of tax incidence indicated in Tables 4.1 and 4.2. For example, the index of tax burden for non-farm units under the Average Tax drops from 110 in the \$3, 000



to \$3,999 bracket, to 94 in the \$4,000 bracket, rising again to 109 in the \$5,000 to \$5,999 bracket. A linear interpolation between the \$3,000 and \$5,000 brackets indicates that consumption in the \$4,000 bracket is underestimated by 3.8 per cent. A similar assumption indicates that consumption in the \$6,000 bracket is overestimated by 12.6 per cent. The adjusted pattern of tax incidence based on these estimates is given in Table 4.4.

TABLE 4.4

ADJUSTED INDICES OF TAX BURDEN, NON-FARM FAMILY UNITS

AVERAGE TAX, ALBERTA, 1965

| Family Money Income | Original Index | Adjusted Index |
|---------------------|----------------|----------------|
| Under \$3,000       | 95             | 97             |
| \$3,000-3,999       | 110            | 111            |
| \$4,000-4,999       | 94             | 99             |
| \$5,000-5,999       | 109            | 110            |
| \$6,000-6,999       | 129            | 114            |
| \$7,000-7,999       | 106            | 108            |
| \$8,000-9,999       | 103            | 105            |
| Over \$10,000       | 78             | 80             |
| All Classes         | 100            | 100            |

Source: Derived from Tables A-3, A-6, and 4.3.



The adjusted indices, while substantially changed in absolute terms in the \$4, 000 and \$6, 000 brackets, exhibit the same relative pattern of incidence as that indicated in the original estimates. As the farm consumption estimates were based on the non-farm data, the adjustments in the non-farm results are illustrative of the changes which would occur in the farm index, and in the over-all index. As the adjustments indicated for the Average Tax would be closely parallel for other forms of the tax for which direct estimates were made, we may assume that the over-all pattern of incidence indicated in Table 4.2 is reasonably accurate, with the qualification that the absolute incidence indicated is probably too low in the \$4, 000 to \$4, 999 bracket, and too high in the \$6, 000 to \$6, 999 bracket.

The estimates of tax liability under the Carter Tax, being taken directly from the Royal Commission Report, rather than being based on Edmonton family expenditure data, would not be subject to the same adjustments in the \$4, 000 and \$6, 000 brackets as indicated for the other forms of the tax. The Carter Tax estimates could be affected by errors in the estimated income distribution, but these are unlikely to be as significant as those in the expenditure data, as the absolute income data was largely obtained from national accounts estimates of Personal Income, and the distributive series were based on a much larger sample







than that used in the expenditure survey. It must be remembered, however, that the estimates for the Carter Tax relate to Canadian families and unattached individuals, and do not reflect any differences between Alberta and Canadian expenditure patterns.

A further check on the reasonableness of the estimates may be made by comparing the results to those obtained in other Canadian studies of tax incidence. As these studies examined the incidence of existing taxes only, they should be compared to the results for the Average Tax. In his study for the Ontario Committee on Taxation, Johnson found the burden of provincial retail sales taxes on Ontario residents, in 1961, to be constant at money income brackets under \$3,000, rise in the \$3,000 to \$3,999 bracket, drop slightly in the \$4,000 to \$4,999 bracket, rise in the \$5,000 to \$6,999 and \$7,000 to \$9,999 brackets, and decline again in the \$10,000 -plus bracket. The differences in income groupings make precise comparisons impossible, but Johnson's results appear to be similar to those obtained in the present study, except that we have found the relative burden of the tax to begin declining at the \$7,000 level, whereas in his study the burden is found to increase in the \$7,000 to \$9,999 bracket, and decline only at incomes over \$10,000.



Unfortunately, the only other recent study of Canadian tax incidence, that prepared by W.I. Gillespie for the Royal Commission on Taxation, does not provide data for provincial retail sales taxes separately. The incidence of provincial sales and excise taxes is combined in the Gillespie study. He finds the relative burden of these taxes, estimated for an average provincial tax structure in 1961, to decline to the \$2,000 to \$2,999 bracket, increase in the \$3,000 to \$3,999 bracket, decline substantially in the \$4,000 to \$4,999 bracket, rise in the \$5,000 to \$6,999 bracket, and decline thereafter.<sup>4</sup> To the extent that the Gillespie estimates for sales and excise taxes combined may be considered applicable to the incidence of retail sales taxes, his results would also appear comparable to those obtained in the present study.



NOTES

1

Note that 'Personal Income' as used here is not identical to the National Accounts concept. See the discussion of the income estimates in Chapter II.

2

Report of the Royal Commission on Taxation, VI (Ottawa: Queen's Printer, 1966), Table E-2, p. 284.

3

J. A. Johnson, The Incidence of Government Revenues and Expenditures ("A Study prepared for the Ontario Committee on Taxation"; Toronto: Queen's Printer, 1968), Table 3:4, p. 38.

4

W. I. Gillespie, The Incidence of Taxes and Public Expenditures in the Canadian Economy ("Studies of the Royal Commission on Taxation, No. 2"; Ottawa: Queen's Printer, 1966), Table A-6, p. 203.



## CHAPTER V

### RETAIL SALES TAX INCIDENCE AND PROVINCIAL TAX POLICY

The estimates of the putative incidence of various forms of retail sales tax on Albertan residents in 1965 presented in Chapter IV cannot provide an answer to the question of whether a retail sales tax should be introduced into the provincial tax structure. That decision rests on a number of considerations, in which the incidence of the tax is only one variable. In fact, it has been suggested in Chapter I that the incidence, or equity, of the tax will not be the major consideration in introducing a retail sales tax in Alberta. It was suggested that the Provincial Government will be 'forced' to introduce a retail sales tax by the pressures of public demand for government services, and by the political and economic constraints on tax policy decisions imposed on an individual province in a federal state. Even if equity is a major consideration in the decision to introduce, or not to introduce, a retail sales tax in Alberta, the





results of the present study must be viewed only as one component of the fiscal incidence within the Province. One cannot judge the equity of a retail sales tax unless something is known of the incidence of existing taxes, of deficit financing and inflation, and of the distribution of benefits from government expenditures. It may well be, as Kenneth Galbraith has suggested in The Affluent Society,<sup>1</sup> that the introduction of a regressive tax will lead, on balance, to a socially desirable redistribution of income. This could occur as a result of the redistributive effects of government spending, because the tax revenues are used to replace revenues from other taxes of an even more regressive nature, or because the introduction of the tax results in a reduction in the rate of inflation, if the incidence<sup>2</sup> of inflation is more regressive than that of the tax.

Given a decision to introduce a retail sales tax, however, the results obtained in the present study identify certain features of the various forms of the tax which would be likely to be considered in adopting a particular form of retail sales tax. We can group these considerations under four general headings: equity, yield, neutrality, and administrative considerations.



## EQUITY

A generally accepted goal of tax policy in today's society is that the distribution of the burden of taxation should be 'equitable'.<sup>3</sup> The most generally accepted principle for determining 'tax equity' is that individuals should be taxed according to their 'ability-to-pay'. There are two aspects of this principle which must be examined. The first, horizontal equity, requires that persons with the same 'ability-to-pay' should be taxed similarly; the second, vertical equity, requires that persons with differing 'ability-to-pay' should bear appropriately different tax burdens. The evaluation of the acceptability of a given tax under these two aspects of equity depends on the acceptance of some criterion for measuring 'ability-to-pay'. It has previously been suggested that the most generally acceptable criterion for these purposes is income, and tax burdens have therefore been evaluated relative to this criterion.

Let us turn first to an examination of the degree to which the selected forms of retail sales tax meet the requirement of horizontal equity--the equal treatment of equals. Given income as the criterion for evaluation, this principle requires that persons with the same income should pay the same amount of tax. No form of sales taxation will meet this requirement perfectly, because sales taxes tax expenditure.



only 4 per cent of their income under the Consumption Tax, while non-farm units would pay 5 per cent of their income under the tax. This discrimination becomes progressively less significant as incomes rise, and home-produced food consumption forms a smaller proportion of farm income and consumption.

An even more serious departure from 'equal treatment of equals' under the Consumption Tax would result from the taxation of money expenditures for rent, while imputed rents are exempt. This would result in discrimination between those who own their own homes and those who rent, compounding the existing discrimination under the Canadian income tax structure, resulting from the exclusion of imputed rents from taxable income.

The Food-Exempt Tax virtually eliminates the discrimination between farm and non-farm units present under the Consumption Tax, as consumption of home-produced fuel by farm units is relatively insignificant. It would, however, result in the same discrimination between home-owners and renters as would exist under the Consumption Tax.

The exemption of food, fuel, and shelter under the Average Tax and the Ontario Tax would avoid the most significant problems resulting from the exclusion of imputed items under the Consumption Tax.





They must necessarily discriminate against persons who choose to spend a larger portion of their income than do others with similar incomes. While this may not be an undesirable outcome from the point of view of fiscal policy objectives, if, for example, it is desirable to restrain consumption, it does not accord with the objective of equal treatment of equals under the income criterion.

Admitting this basic short-coming of all sales taxes, however, which of the selected forms comes closest to meeting the objective? The Consumption Tax would on casual observation seem clearly superior here, as it taxes all expenditures and therefore does not discriminate between persons on the basis of their particular consumer tastes. It suffers, however, from one serious shortcoming, which is again common to all sales taxes. Being based on money expenditures, it discriminates in favour of those persons whose consumption is partially in kind. Those who grow some of their own food, or repair their own cars, will bear a lesser burden than others who, by choice or necessity, purchase these goods and services. As farm family units consume substantial amounts of home-produced food and fuel, the Consumption Tax, under which food and fuel purchases are taxed, would significantly favour farm units. We find that in the case of family units with money incomes below \$3,000, farm units would pay





However, the numerous exemptions under these two forms of the tax, particularly the exemption of food and service expenditures, must result in discrimination between individuals on the basis of their particular tastes (or needs). This discrimination is intensified under the Ontario Tax structure by the imposition of a 10 per cent tax rate on purchases of liquor, meals, and amusement admissions. Although the higher rate on these purchases presumably is meant to achieve other tax policy goals, including that of vertical equity, it must clearly result in an unequal tax treatment of family units whose incomes are similar, depending on the proportion of their expenditures which they choose to devote to purchases of those goods and services taxed at the higher rate.

The form of retail sales tax recommended by the Carter Commission avoids most of the more significant problems found under the other forms of retail sales tax examined. The exemption of food, fuel, and shelter expenses avoids the more serious problems present under the Consumption and Food-Exempt Taxes, while the taxation of services recommended by the Commission would remove one of the most serious problems of horizontal equity present under existing provincial retail sales taxes. Exemptions are limited to food, prescribed drugs, newspapers, magazines and books, farm machinery,



business services, and other miscellaneous services for which it was felt the administrative costs of collection would outweigh equity considerations. While these exemptions would undoubtedly result in some departure from the objective of 'equal treatment of equals', the Carter Tax would clearly appear superior to the other forms of tax examined in the achievement of this goal.

The other dimension of tax equity involves the 'appropriate' treatment of persons in unequal circumstances, that is, with different incomes. The determination of equity in this context is a value-judgement which must result, in a democratic society, from generally accepted social judgements. The recommendation of the Royal Commission on Taxation probably reflects the most broadly accepted view of the problem in Canadian society: "We believe that vertical equity is achieved when individuals and families pay taxes that are a constant proportion of their discretionary economic power"<sup>4</sup>.

The Commission goes on to state that, "Because we believe that non-discretionary expenses absorb a much larger proportion of the annual additions to the economic power of those with low income than of the wealthy, in order to attain the proportionate taxation of discretionary economic power, we recommend that a base that measures total economic power be taxed at progressive rates."<sup>5</sup> As the Commission



accepts income as a measure of 'economic power', their recommendation suggests that an 'equitable' tax should be progressive with respect to income.

None of the selected forms of retail sales tax meet this requirement fully. In all cases the burden of the tax is regressive over some part of the income range. Thus none of the selected forms of retail sales tax accord fully with the principle of taxation according to 'ability-to-pay' under generally accepted concepts of this requirement; the problem is one of identifying the form of tax which does least violence to the principle.

In the case of the first four forms of the tax selected (see Table 4.2 above), it is relatively easy to make comparisons, as the pattern of incidence is similar for each of these forms, with only the magnitude of tax burdens varying. In all cases, the tax burden rises from the under \$3,000 bracket to the \$3,000 to \$3,999 bracket, drops in the \$4,000 bracket, rises through the \$5,000 and \$6,000 brackets and then declines over the upper three income brackets. However, the relative burden of the tax is higher for all income levels below \$6,000 in the case of the Consumption and Food-Exempt Taxes than it is under the Average Tax and the Ontario Tax, and is lower for all income classes above \$6,000 under the Consumption





and Food-Exempt Taxes than it is under the Average and Ontario taxes. We can thus conclude that the latter forms of the tax are more acceptable under the 'ability-to-pay' principle than the former, even though they do not meet the requirement perfectly. Between the Average Tax and the Ontario Tax there is little to choose, the incidence of the two taxes being almost identical.

The choice between these forms of tax and that recommended by the Carter Commission is more difficult, however. We have seen that the pattern of incidence under the Carter Tax is exactly opposite to that estimated for the Average and Ontario taxes. The Carter Tax is found to be regressive over the lower income levels, and progressive in the upper income levels. While units with incomes in excess of \$10,000 bear a relatively heavier burden of taxation under the Carter Tax than they would under the Average Tax, the same is true of persons with income below \$3,000. For all income groups between \$3,000 and \$10,000, the relative burden would be less under the Carter Tax than under the Average Tax with those in the \$5,000 and \$6,000 brackets being particularly better off under the Carter Tax.

This presents a classic type of trade-off problem which ultimately can only be resolved politically. D. G. Davies has, however, suggested one means of dealing with the problem of comparing incidence where





part of the income range is under progression, and part under re-  
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gression. He suggests that we compare either the proportion of the population to which progressivity applies, or the proportion of total income to which progressivity applies, with the form of tax under which the largest proportion of either population or income is subject to progressive rates being judged 'best'. Unfortunately, this type of analysis is also inconclusive. We find that under the Average and Ontario Tax structures, 64 per cent of all units fall in

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 income classes under progression, while under the Carter tax structure only 41 per cent of units fall under progressive rates. This could suggest that the former tax structures more closely approximate the principle of 'ability-to-pay' than does the Carter tax structure. However, using income as the criterion, we find that 78 per cent of total income is under progression under the Carter Tax, while only 36 per cent of income falls in the progressive income brackets under the Average and Ontario taxes.

It is therefore impossible to come to any final conclusion regarding the form of retail sales tax which would be most acceptable from the point of view of vertical equity. One suspects that the fact that all income groups between \$3,000 and \$10,000 would bear a lower burden of taxation for a given revenue yield under the Carter



Tax, than under the Average or Ontario taxes, would make the former tax structure more 'acceptable' than the latter. But this consideration would undoubtedly be offset to some extent by the fact that persons with incomes below \$3,000 would bear a burden almost 10 per cent greater under the Carter Tax than they would under the Average or Ontario taxes.

### YIELD

Our concern with equity and the economic consequences of taxation must not be allowed to blind us to the role of taxation in obtaining the financial resources necessary for the provision of public goods and services. It has already been suggested that the introduction of a retail sales tax in Alberta is more likely to result from this basic fact of fiscal life, than from more esoteric tax policy considerations such as the incidence and economic consequences of the provincial tax structure. It is reasonable to assume, then, that the yield of the tax would also be a consideration in choosing a particular form of retail sales tax.

Three factors would be likely to be of primary concern: (1) the total revenue yield of the tax at given statutory rates; (2) the 'elasticity' of the tax with respect to growth in provincial income; (3) the proportion



of the tax paid initially by business.

The most desirable form of retail sales tax, from the point of view of maximizing revenue yields at a given tax rate, will clearly be that which allows fewest exemptions. The advantage of a Consumption Tax with no exemptions is obvious. It is estimated that such a tax would have yielded \$114 million in Alberta in 1965 at a 5 per cent rate, approximately 32 per cent more than the \$87 million estimated yield of an Average Tax, and 23 per cent more than the \$93 million estimated yield under the type of tax presently  
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levied in Ontario. The Ontario Tax, with a 10 per cent rate levied on meals, liquor, and admissions, provides the second highest yield of the selected tax structures, with the Food-Exempt Tax, the Average Tax, and the Carter Tax yielding almost identical revenues.

Perhaps an even more important consideration than the initial yield of a tax, however, is the built-in growth potential of the tax--its elasticity. Expenditures of provincial governments have, in recent years, out-stripped both economic and revenue growth. In these fiscal circumstances, policymakers may be assumed to be anxious to develop revenue sources which will benefit from natural growth in the tax base, reducing the politically unpalatable necessity for rate increases.



While no direct estimates of the income-elasticity of the selected retail sales taxes have been made, some insight into expected elasticities can be gained from the structure of the taxes.

The Consumption Tax would be expected to have an income-elasticity of approximately one, as consumer expenditure tends,  
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 over the long-run, to grow proportionately to income.

The Food-Exempt Tax would be expected to have an elasticity greater than one, as food expenditures grow relatively more slowly  
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 than total income and consumption, so that non-food consumer expenditure grows more rapidly than total consumption.

In the case of the Average and Ontario Taxes, it is more difficult to predict elasticity. The exemption of food and other necessities would be expected to contribute to tax elasticity, but the exemption of services, which grow more rapidly than other expenditures, would be expected to result in reduced elasticity under these tax structures. A further complication results from the taxation of various business expenditures, for which income-elasticity is difficult to predict. On balance, these forms of tax would  
 12  
 likely have elasticities close to one.

The Carter Tax would be expected to have an elasticity greater than one, as a result of the taxation of services, and the exemption







of food expenditures.

The final point which must be considered in examining tax yields is the proportion of the tax paid by business. This factor is significant for two reasons. Firstly, while it has been assumed that any portion of the tax levied on goods and services consumed by businesses will be shifted forward to consumers, the hidden nature of the tax on business is likely to be politically attractive. Secondly, it has been estimated that some 32 per cent of the tax on business expenditures would be shifted to non-residents of Alberta.

The latter consideration would offset the undesirable consequences of business taxation on vertical equity. We have estimated, for example, that under the Average Tax, non-farm units in the under \$3,000 money income bracket would pay 11.9 per cent of the portion of business taxes paid by Alberta residents, compared to only 8.0 per cent of the tax borne directly by individuals. But in absolute terms, units in this income group would pay \$8.00 for each \$100 of tax levied on individuals, and only \$8.10 for each \$100 of tax levied on business, the difference being accounted for by the portion of the business tax shifted to non-residents. For farm and non-farm units combined, in the under \$3,000 income bracket, the absolute burden of business taxes would actually be less than the



absolute burden of taxes levied directly on individuals. In all income brackets above \$3,000, the shifting of business taxes to non-residents would result in a lower dollar tax burden per dollar revenue for taxes levied on business than for those levied on personal consumption.

The estimates indicate that under an Average Tax, approximately 41.5 per cent of revenues would be obtained through taxation of business purchases, (see Table A-6). Under the Ontario Tax, 36.7 per cent of revenues would be obtained through business taxation. The Consumption and Food-Exempt Taxes exclude, by definition, business taxation. The estimates of yield presented in the Report of the Royal Commission on Taxation, indicate that, on a nation-wide basis, 29.7 per cent of the tax recommended by the Commission would fall on business purchases. <sup>14</sup> The attractiveness of existing provincial retail sales tax structures, as well as the reluctance of the provinces to adopt recommendations by economists for reducing the burden of sales taxation on producer goods, is perhaps explained by these figures.

We find then, that while the Consumption Tax scores well on the basis of revenue productivity, it is a poor form of tax from the point-of-view of elasticity and business yield. The Average Tax is



attractive in that a high proportion of revenue is obtained from business taxation, but it is a relatively inelastic form of tax, and does not give a particularly high initial revenue yield. Probably the Carter Tax is most acceptable on the basis of yield considerations, being relatively elastic, and yielding considerable revenue from  
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 business taxation.

## NEUTRALITY

The form of retail sales tax imposed can be expected to have  
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 important consequences for resource use and resource allocation. Given the assumption that the market has achieved an optimum pre-tax allocation of resources, the 'best' form of retail sales tax will be that which is most nearly neutral in its impact on resource allocation.

The failure of existing provincial retail sales taxes to meet this requirement has been the source of much of the criticism of  
 17  
 these taxes. The violation of the principle of neutrality under existing retail sales taxes takes two major forms: the taxation of producer goods, and the exemption of various consumer goods and services. An ideal tax, from the point of view of neutrality, would exempt all producer goods and tax all consumer goods and services. It would, in other words, correspond to the tax structure we have



termed a Consumption Tax.

The Food-Exempt Tax would also closely approximate the ideal, as food purchases represent the only consumer exemption, and producer goods are fully exempt. Surprisingly enough, in view of the importance attached to tax neutrality by the Carter Commission, the form of retail sales tax recommended by the Commission is not acceptable under the criterion of neutrality. While the Report condemns the distortions in resource allocation resulting from the exemption of services under existing Canadian sales taxation, and uses this as one of its chief arguments in favour of the taxation of

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services, they go on to recommend numerous consumer exemptions and the taxation of equipment purchases by business. This apparent inconsistency results from the priority attached to equity by the Commission, and their assumption that it is not presently administratively feasible to provide for equity through income tax credits

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rather than sales tax exemptions. The elimination of the exemption on services and children's clothing under the Carter tax structure would, at any rate, make the tax more acceptable on economic grounds than either the Average or Ontario taxes.







## ADMINISTRATIVE CONSIDERATIONS

A final consideration in adopting a particular form of retail sales tax is the administrative problems which would be associated with assessing and collecting the tax. Administrative problems are likely to arise as a result of exemptions of certain goods and services, which will require an analysis of sales by commodity to assess tax liabilities; or as a result of the exemption of purchases by certain classes of customer, or for certain purposes.

The Consumption Tax has the advantage of taxing all consumer expenditure, thus avoiding the administrative problems arising from exemptions. The tax would not be free from administrative complications, however. The exemption of all business purchases would create serious administrative problems. These would be particularly present in the service sector. Legal and accounting services, transportation services, meals, and hotel and motel accommodation, are examples of services where business expenditures would form a substantial proportion of total sales, creating administrative problems in distinguishing consumption expenditures. It would be necessary, for example, to exempt expenditures by businessmen for air transportation, and for hotel and motel accom-



modation. But the determination of whether an individual were using these services for business or personal reasons would present almost insurmountable administrative obstacles.

The distinction between capital and consumption expenditures would create further administrative problems under this form of tax. For example, we have defined the tax to exempt housing purchases, but to include expenditures for housing maintenance. This would make it necessary to know the purpose for which housing materials were purchased in order to assess tax liabilities, a requirement sure to produce administrative problems.

In fact, then, a 'pure' consumer expenditure tax would not be administratively feasible. Inevitably certain capital expenditures and producer goods would have to be included, and certain consumption expenditures would be exempt, under any administratively acceptable form of the tax.

The chief administrative problems under the Average Tax result from the numerous exemptions made under the tax. These exemptions make it necessary for retailers to account separately for taxable and non-taxable sales, rather than calculating tax liabilities directly from total sales. However, most of the more serious administrative problems have been effectively dealt with under existing provincial



taxes. The fact that by adopting this form of tax, it would be possible to draw on the experience of other provincial jurisdictions would provide an important administrative incentive for the adoption of this form of tax. Administrative problems under the form of tax presently imposed in Ontario are similar to those which would exist under the Average Tax, but the imposition of differential tax rates on meals, admissions, and liquor purchases would result in additional administrative problems.

The form of tax recommended by the Carter Commission would probably present fewer administrative problems than any of the other forms of retail sales tax examined here. Rather than attempting to distinguish between services provided to business and those provided to individuals, the Commission recommended that those services largely utilized by business be completely exempt, while those largely utilized by individuals be taxed on all sales, whether made to business or to individuals. This avoids the problem present under the Consumption Tax. Furthermore, the Commission recommended the elimination of several exemptions presently granted under existing Provincial retail sales taxes, thus eliminating many of the administrative problems encountered under these taxes. In particular, they recommended that children's clothing, automotive fuels, and



repairs and services rendered by retail establishments be taxable. This would eliminate many of the administrative problems present under existing provincial taxes.

## CONCLUSIONS

No one form of retail sales tax considered here is clearly superior under all criteria likely to be considered in adopting a particular form of retail sales tax. It is therefore not possible to be categorical in stating which form of sales tax would be 'best', or most likely to be adopted in introducing a retail sales tax in Alberta.

From the point of view of equity, yield, and administrative considerations, however, the form of tax recommended by the Royal Commission on Taxation is equivalent to, or better than, the other forms of tax examined. Only with respect to the economic consideration of neutrality, is another form of tax--the Consumption Tax--superior to the Carter Tax.







## NOTES

1

J. K. Galbraith, The Affluent Society (New York: New American Library of World Literature, Inc., 1963; first published in 1958: Boston, Houghton Mifflin Company), pp. 245-246.

2

A study of the incidence of inflation in the United States economy has suggested that inflation is more regressive in its impact than are food-exempt retail sales taxes. See B. Pesek, "A Comparison of the Distribution Effects of Inflation and Taxation," American Economic Review, Vol. L, No. 1 (March, 1960), pp. 147-153.

3

The public reaction to the recommendations of the Royal Commission on Taxation suggests that there is not complete agreement in Canadian society on the priority which should be attached to the goal of equity, however. See, for example, the Submission by the Government of the Province of Alberta concerning the report of the Royal Commission on Taxation (Queen's Printer, Alberta, 1967), pp. 17-18.

4

Report of the Royal Commission on Taxation, I (Ottawa: Queen's Printer, 1966), p. 5.

5

Ibid., pp. 19-20.

6

The Commission defines income more broadly than it has been defined in the present study, including capital gains, and gifts and inheritances in the income measure. They do not, however, include imputed income.

7

D. G. Davies, "Commodity Taxation and Equity," The Journal of Finance, Vol. XVI, No. 4 (December, 1961), reprinted in Canadian Tax Journal, Vol. X, No. 4 (July - August, 1962), pp. 262-269.

8

Turning-point income classes have been treated as half under progression and half under regression.



9

See Appendix, Table A-6.

10

See G. Ackley, Macroeconomic Theory (New York: The Macmillan Company, 1961), pp. 238-239.

11

Food expenditures declined, as a proportion of total consumer expenditure, from 24.3 per cent in 1960 to 21.9 per cent in 1966, in Canada. See Dominion Bureau of Statistics, National Accounts, Income and Expenditure, 1966 (Ottawa: Queen's Printer, 1967), Table 47.

12

See K. E. Poole, The Retail Tax: An Economic Study ("A study prepared for The Ontario Committee on Taxation"; Queen's Printer, 1968), pp. 103-106.

13

Appendix, Table A-1, Lines 18 and 20.

14

The estimate is based on data given in Table D-1 of the Report of the Royal Commission on Taxation, II, p. 277. It is assumed that 5.8 per cent of retail sales are made to business.

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It is also likely that the estimates of the yield of a Carter Tax given in Table A-6 are low. Services, most of which are exempt under the Average Tax, form 19 per cent of the Carter Tax base. But the estimates of yield in Table A-6 indicate only a marginally higher yield under the Carter Tax. The Carter yield is probably under-estimated because, being based on Canadian data, it does not take account of the high construction expenditures in Alberta.

16

The economic consequences of retail sales taxes are discussed in K. E. Poole, op. cit., Chapter 7, and by the same author in "The Fiscal Performance of Indirect Taxation", Papers in Taxation and Public Finance, No. 3, ed. J. R. Allan and I. J. Goffman, (Toronto: Canadian Tax Foundation, 1966), pp. 17-46.

17

See, for example, K. E. Poole, op. cit., pp. 97-98 and Report of the Royal Commission on Taxation, II, p. 134.

18

Report of the Royal Commission on Taxation, loc. cit.

19

Ibid., I, pp. 8-9.



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TABLE A-1  
DISTRIBUTIVE SERIES, 1965

| Line  | -----Family Money Income----- |               |               |               |               |               |               |          |      |             |
|---|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|----------|------|-------------|
|   | Under \$3,000                 | \$3,000-3,999 | \$4,000-4,999 | \$5,000-5,999 | \$6,000-6,999 | \$7,000-7,999 | \$8,000-9,999 | \$10,000 | Over | TOTAL       |
|   |                               |               |               |               |               |               |               |          |      | Percentages |
| 1. Wages and Salaries   | 6.0                           | 5.5           | 9.1           | 13.8          | 14.2          | 11.6          | 18.0          | 21.8     |      | 100.0       |
| 2. Wages and Salaries, Non-Farm                                       | 5.8                           | 5.3           | 9.3           | 13.8          | 14.0          | 11.7          | 18.2          | 21.9     |      | 100.0       |
| 3. Military Pay and Allowances  | 3.8                           | 3.3           | 19.6          | 19.2          | 19.3          | 7.1           | 14.4          | 13.2     |      | 100.0       |
| 4. Net Income of Unincorporated Business, Non-Farm                    | 3.0                           | 6.3           | 4.7           | 5.6           | 13.4          | 10.7          | 15.0          | 41.3     |      | 100.0       |
| 5. Money Income: Interest, Dividends, and Net Rental Income           | 10.9                          | 8.5           | 5.0           | 6.0           | 7.5           | 4.1           | 9.1           | 48.5     |      | 100.0       |
| 6. Money Income: Interest, Dividends, and Net Rental Income, Non-Farm | 10.7                          | 8.6           | 5.2           | 5.9           | 7.2           | 4.4           | 9.9           | 48.1     |      | 100.0       |
| 7. Imputed Interest   | 15.8                          | 7.3           | 10.5          | 10.2          | 7.1           | 4.9           | 9.9           | 32.2     |      | 100.0       |
| 8. Imputed Rent   | 14.9                          | 5.7           | 8.7           | 12.5          | 11.0          | 10.2          | 15.4          | 21.4     |      | 100.0       |
| 9. Investment Income of Life Insurance Companies                      | 7.6                           | 9.7           | 13.2          | 13.2          | 13.2          | 6.5           | 13.1          | 23.6     |      | 100.0       |
| 10. Transfer Payments   | 44.8                          | 9.9           | 9.6           | 9.0           | 8.5           | 4.6           | 7.3           | 6.3      |      | 100.0       |
| 11. Transfer Payments, Non-Farm                                       | 46.3                          | 8.6           | 9.3           | 8.8           | 9.1           | 5.1           | 7.2           | 5.6      |      | 100.0       |



TABLE A-1 (cont.)

| Line  | Family Money Income |               |               |               |               |               |               |          |       |  |
|---|---------------------|---------------|---------------|---------------|---------------|---------------|---------------|----------|-------|--|
|   | Under \$3,000       | \$3,000-3,999 | \$4,000-4,999 | \$5,000-5,999 | \$6,000-6,999 | \$7,000-7,999 | \$8,000-9,999 | \$10,000 | TOTAL |  |
|   | Percentages         |               |               |               |               |               |               |          |       |  |
| 12. Other Money Income                                  | 20.9                | 14.1          | 9.5           | 9.7           | 8.2           | 5.8           | 12.4          | 19.4     | 100.0 |  |
| 13. Other Money Income                                  |                     |               |               |               |               |               |               |          |       |  |
| 14. Non-Farm  | 21.4                | 14.4          | 9.5           | 10.0          | 8.4           | 5.8           | 11.2          | 19.3     | 100.0 |  |
| 14. Net Farm Money Income                               |                     |               |               |               |               |               |               |          |       |  |
| 15. come from Farm                                      |                     |               |               |               |               |               |               |          |       |  |
| 15. Production  | 9.6                 | 12.3          | 8.0           | 10.7          | 10.5          | 8.5           | 15.6          | 24.8     | 100.0 |  |
| 15. Family Units  | 31.4                | 10.5          | 10.0          | 11.8          | 10.5          | 7.3           | 9.8           | 8.7      | 100.0 |  |
| 16. Family Units,                                       |                     |               |               |               |               |               |               |          |       |  |
| 16. Non-Farm  | 30.0                | 9.2           | 10.4          | 12.1          | 11.1          | 7.9           | 10.3          | 9.0      | 100.0 |  |
| 17. Family Units, Farm                                  | 37.9                | 16.5          | 8.1           | 10.4          | 7.7           | 4.5           | 7.5           | 7.3      | 100.0 |  |
| 18. Total Money Expenditure, Non-Farm                   |                     |               |               |               |               |               |               |          |       |  |
| 19. Units   | 11.9                | 7.4           | 9.3           | 13.4          | 15.8          | 10.5          | 15.0          | 16.7     | 100.0 |  |
| 19. Total Money Expenditure, excluding food,            |                     |               |               |               |               |               |               |          |       |  |
| 20. Non-Farm Units                                      | 11.1                | 7.3           | 8.9           | 13.1          | 16.0          | 10.7          | 15.6          | 17.2     | 100.0 |  |
| 20. Taxable Expenditure, Average Tax, Non-Farm Units    |                     |               |               |               |               |               |               |          |       |  |
| 21. Taxable Expenditure, Ontario Tax, Non-Farm Units    |                     |               |               |               |               |               |               |          |       |  |
| 22. Total Money Expenditure, Farm Units                 | 8.0                 | 6.4           | 7.8           | 12.8          | 17.1          | 11.0          | 17.2          | 19.7     | 100.0 |  |
| 23. Total Money Expenditure, excluding food, Farm Units |                     |               |               |               |               |               |               |          |       |  |
| 23. Total Money Expenditure, excluding food, Farm Units | 8.2                 | 6.3           | 7.8           | 12.8          | 17.4          | 11.1          | 17.0          | 19.4     | 100.0 |  |
| 23. Total Money Expenditure, Farm Units                 | 13.9                | 14.9          | 7.8           | 12.1          | 13.6          | 7.9           | 13.2          | 16.6     | 100.0 |  |
| 23. Total Money Expenditure, excluding food, Farm Units | 14.7                | 15.0          | 7.5           | 11.7          | 13.5          | 7.7           | 13.4          | 16.5     | 100.0 |  |



TABLE A-1 (cont.)

| Line   | Family Money Income----- |                   |                   |                   |                   |                   |                   |                  |             |  |
|--|--------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|-------------|--|
|  | Under<br>\$3,000         | \$3,000-<br>3,999 | \$4,000-<br>4,999 | \$5,000-<br>5,999 | \$6,000-<br>6,999 | \$7,000-<br>7,999 | \$8,000-<br>9,999 | Over<br>\$10,000 | TOTAL       |  |
|  |                          |                   |                   |                   |                   |                   |                   |                  | Percentages |  |
| 24. Taxable Expenditure,<br>Average Tax, Farm<br>Units | 11.1                     | 13.4              | 6.7               | 11.6              | 14.7              | 8.2               | 15.1              | 19.2             | 100.0       |  |
| 25. Taxable Expenditure,<br>Ontario Tax, Farm<br>Units | 11.4                     | 13.2              | 6.7               | 11.7              | 14.9              | 8.2               | 14.9              | 19.0             | 100.0       |  |

Source: See page 119.

Note: Details may not add due to rounding.



TABLE A-2

## PERSONAL INCOME DISTRIBUTION, ALBERTA, 1965

| Line | Source   | -----Family Money Income----- |                |                |                |                |                |                |               |           |  | TOTAL |
|------|--|-------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|-----------|--|-------|
|      |  | Under \$3,000                 | \$3,000- 3,999 | \$4,000- 4,999 | \$5,000- 5,999 | \$6,000- 6,999 | \$7,000- 7,999 | \$8,000- 9,999 | Over \$10,000 |           |  |       |
|      |  | Millions                      |                |                |                |                |                |                |               |           |  |       |
| 1.   | NON-FARM INCOME, Total                         | \$234.0                       | \$146.5        | \$210.5        | \$286.5        | \$309.0        | \$243.6        | \$382.4        | \$572.8       | \$2,385.5 |  |       |
| 2.   | Wages and Salaries                             | 93.8                          | 85.8           | 150.5          | 223.3          | 226.5          | 189.3          | 294.5          | 354.3         | 1,618.0   |  |       |
| 3.   | Military Pay and Allowances                    | 1.2                           | 1.1            | 6.5            | 6.3            | 6.4            | 2.3            | 4.8            | 4.4           | 33.0      |  |       |
| 4.   | Net Income of Non-Farm Unincorporated Business | 6.9                           | 14.4           | 10.8           | 12.8           | 30.7           | 24.5           | 34.4           | 94.6          | 229.0     |  |       |
| 5.   | Interest, Dividends, and Net Rental Income     | 28.1                          | 21.7           | 19.7           | 22.0           | 23.3           | 14.7           | 29.4           | 100.2         | 259.2     |  |       |
| 6.   | Money Income                                   | 16.9                          | 13.6           | 8.2            | 9.3            | 11.4           | 7.0            | 15.7           | 76.1          | 158.2     |  |       |
| 7.   | Imputed Interest                               | 1.9                           | .9             | 1.3            | 1.2            | .9             | .6             | 1.2            | 3.9           | 12.0      |  |       |
| 8.   | Imputed Rent                                   | 5.1                           | 1.9            | 3.0            | 4.3            | 3.8            | 3.5            | 5.3            | 7.3           | 34.2      |  |       |
| 9.   | Investment Income of Life Insurance Companies  | 4.2                           | 5.3            | 7.2            | 7.2            | 7.2            | 3.6            | 7.2            | 12.9          | 54.8      |  |       |
| 10.  | Transfer Payments                              | 95.4                          | 17.7           | 19.2           | 18.1           | 18.7           | 10.5           | 14.8           | 11.5          | 206.0     |  |       |
| 11.  | Other Money Income                             | 8.6                           | 5.8            | 3.8            | 4.0            | 3.4            | 2.3            | 4.5            | 7.8           | 40.3      |  |       |
| 12.  | FARM INCOME, Total                             | 59.4                          | 56.4           | 33.3           | 48.2           | 48.7           | 33.1           | 61.6           | 102.8         | 443.5     |  |       |





TABLE A-2 (cont.)

| Line | Source   | -----Family Money Income----- |                 |                 |                 |                 |                 |                 |          |         |       |
|------|--|-------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------|---------|-------|
|      |  | Under \$3,000                 | \$3,000-\$3,999 | \$4,000-\$4,999 | \$5,000-\$5,999 | \$6,000-\$6,999 | \$7,000-\$7,999 | \$8,000-\$9,999 | \$10,000 | Over    | TOTAL |
|      |  | \$                            | \$              | \$              | \$              | \$              | \$              | \$              | \$       | \$      |       |
| 13.  | Wages and Salaries                             | 1.2                           | 1.6             | 1.0             | 1.4             | 1.4             | 1.4             | 2.0             | 3.2      | 13.0    |       |
| 14.  | Net Income of Non-Farm Unincorporated Business | 38.9                          | 41.7            | 26.5            | 35.3            | 34.0            | 27.1            | 49.6            | 77.7     | 331.0   |       |
| 15.  | Net Farm Income                                | 29.4                          | 37.6            | 24.5            | 32.7            | 32.1            | 26.0            | 47.7            | 75.9     | 306.0   |       |
| 16.  | Money Income                                   | 9.5                           | 4.1             | 2.0             | 2.6             | 1.9             | 1.1             | 1.9             | 1.8      | 25.0    |       |
| 17.  | Imputed Income                                 |                               |                 |                 |                 |                 |                 |                 |          |         |       |
| 18.  | Interest, Dividends, and Net Rental Income     | 3.7                           | 1.7             | 1.5             | 2.4             | 2.7             | 1.1             | 2.4             | 10.2     | 25.8    |       |
| 19.  | Money Income                                   | 1.9                           | 1.0             | .4              | 1.0             | 1.5             | .1              | .7              | 7.4      | 14.0    |       |
| 20.  | Imputed Interest                               | .4                            | .2              | .3              | .3              | .2              | .1              | .3              | .8       | 2.6     |       |
| 21.  | Imputed Rent                                   | 1.4                           | .5              | .8              | 1.1             | 1.0             | .9              | 1.4             | 2.0      | 9.2     |       |
| 22.  | Transfer Payments                              | 9.0                           | 5.4             | 3.2             | 2.9             | 1.1             | .2              | 2.2             | 3.2      | 27.0    |       |
| 23.  | Other Money Income                             | .8                            | .5              | .5              | .4              | .3              | .3              | 1.1             | .9       | 4.7     |       |
| 24.  | FARM AND NON-FARM INCOME, Total                | 293.4                         | 202.9           | 243.8           | 334.7           | 357.7           | 276.7           | 444.0           | 675.6    | 2,829.0 |       |
| 25.  | Wages and Salaries                             | 99.6                          | 91.3            | 151.1           | 229.1           | 235.7           | 192.6           | 298.8           | 361.9    | 1,660.0 |       |
| 26.  | Military Pay and Allowances                    | 1.2                           | 1.1             | 6.5             | 6.3             | 6.4             | 2.3             | 4.8             | 4.4      | 33.0    |       |
| 27.  | Net Income of Non-Farm Unincorporated Business | 8.1                           | 16.0            | 11.8            | 14.2            | 32.1            | 25.6            | 36.4            | 97.8     | 242.0   |       |



TABLE A-2 (cont.)

| Line     | Source  | -----Family Money Income----- |               |               |               |               |               |               |               |          |  |
|----------|---|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------|--|
|          |   | Under \$3,000                 | \$3,000-3,999 | \$4,000-4,999 | \$5,000-5,999 | \$6,000-6,999 | \$7,000-7,999 | \$8,000-9,999 | \$10,000 Over | TOTAL    |  |
| Millions |   |                               |               |               |               |               |               |               |               |          |  |
| 28.      | Net Farm Income                                     | \$ 38.9                       | \$ 41.7       | \$ 26.5       | \$ 35.3       | \$ 34.0       | \$ 27.1       | \$ 49.6       | \$ 77.7       | \$ 331.0 |  |
| 29.      | Interest, Dividends,<br>and Net Rental<br>Income    | 31.8                          | 23.4          | 21.2          | 24.4          | 26.0          | 15.8          | 31.8          | 110.4         | 285.0    |  |
| 30.      | Money Income  | 18.8                          | 14.6          | 8.6           | 10.3          | 12.9          | 7.1           | 16.4          | 83.5          | 172.2    |  |
| 31.      | Imputed Interest                                    | 2.3                           | 1.0           | 1.6           | 1.5           | 1.1           | .7            | 1.5           | 4.7           | 14.6     |  |
| 32.      | Imputed Rent  | 6.5                           | 2.5           | 3.8           | 5.4           | 4.8           | 4.4           | 6.7           | 9.3           | 43.4     |  |
| 33.      | Investment Income<br>of Life Insurance<br>Companies | 4.2                           | 5.3           | 7.2           | 7.2           | 7.2           | 3.6           | 7.2           | 12.9          | 54.8     |  |
| 34.      | Transfer Payments                                   | 104.4                         | 23.1          | 22.4          | 21.0          | 19.8          | 10.7          | 17.0          | 14.7          | 233.0    |  |
| 35.      | Other Money Income                                  | 9.4                           | 6.3           | 4.3           | 4.4           | 3.7           | 2.6           | 5.6           | 8.7           | 45.0     |  |

Source: See page 123.

Note: Details may not add due to rounding.



TABLE A-3

ESTIMATED AVERAGE CONSUMPTION EXPENDITURE, BY MONEY INCOME CLASS  
NON-FARM FAMILY UNITS, ALBERTA 1964, ADJUSTED FOR 1965 INCOME DISTRIBUTION

| -----Family Money Income----- |                           |               |               |               |              |               |               |               |               |         |  |  |  | ALL |  |
|-------------------------------|---------------------------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|---------------|---------|--|--|--|-----|--|
| Line                          | Item                      | Under \$3,000 | \$3,000-3,999 | \$4,000-4,999 | \$5,0005,999 | \$6,000-6,999 | \$7,000-7,999 | \$8,000-9,999 | Over \$10,000 | CLASSES |  |  |  |     |  |
|                               |                           | Dollars       |               |               |              |               |               |               |               |         |  |  |  |     |  |
| 1.                            | Food                      | 499           | 855           | 1,073         | 1,239        | 1,396         | 1,347         | 1,300         | 1,765         | 1,044   |  |  |  |     |  |
| 2.                            | Shelter                   | 479           | 906           | 938           | 934          | 1,150         | 1,166         | 1,205         | 1,300         | 898     |  |  |  |     |  |
| 3.                            | Rented                    | 262           | 473           | 451           | 285          | 369           | 235           | 135           | 103           | 286     |  |  |  |     |  |
| 4.                            | Owned                     | 143           | 291           | 316           | 443          | 511           | 699           | 796           | 844           | 426     |  |  |  |     |  |
| 5.                            | Other                     | 1             | 6             | 2             | 34           | 94            | 28            | 30            | 93            | 29      |  |  |  |     |  |
| 6.                            | Fuel, Light, Water        | 72            | 135           | 169           | 171          | 176           | 205           | 243           | 260           | 156     |  |  |  |     |  |
| 7.                            | Household Operation       | 90            | 171           | 198           | 203          | 274           | 233           | 283           | 338           | 196     |  |  |  |     |  |
| 8.                            | Furnishings and Equipment | 29            | 158           | 181           | 302          | 485           | 505           | 287           | 564           | 253     |  |  |  |     |  |
| 9.                            | Clothing                  | 161           | 352           | 360           | 476          | 821           | 547           | 695           | 992           | 471     |  |  |  |     |  |
| 10.                           | Transportation            | 157           | 428           | 523           | 742          | 900           | 895           | 1,499         | 1,729         | 711     |  |  |  |     |  |
| 11.                           | Car Purchase              | --            | 118           | 142           | 271          | 294           | 279           | 731           | 887           | 268     |  |  |  |     |  |
| 12.                           | Car Operation             | 90            | 248           | 295           | 428          | 448           | 486           | 611           | 687           | 345     |  |  |  |     |  |
| 13.                           | Other Transportation      | 68            | 62            | 86            | 42           | 159           | 131           | 157           | 155           | 98      |  |  |  |     |  |
| 14.                           | Medical Care              | 73            | 147           | 199           | 214          | 245           | 263           | 218           | 268           | 177     |  |  |  |     |  |
| 15.                           | Personal Care             | 55            | 128           | 107           | 140          | 205           | 152           | 170           | 214           | 128     |  |  |  |     |  |
| 16.                           | Recreation                | 63            | 141           | 114           | 168          | 214           | 312           | 312           | 269           | 169     |  |  |  |     |  |
| 17.                           | Reading                   | 18            | 27            | 36            | 61           | 69            | 38            | 55            | 66            | 41      |  |  |  |     |  |
| 18.                           | Education                 | 25            | 74            | 24            | 125          | 71            | 46            | 46            | 246           | 70      |  |  |  |     |  |
| 19.                           | Tobacco and Alcohol       | 76            | 102           | 143           | 191          | 384           | 312           | 214           | 276           | 134     |  |  |  |     |  |
| 20.                           | Other                     | 18            | 44            | 62            | 87           | 40            | 71            | 110           | 154           | 62      |  |  |  |     |  |
| 21.                           | TOTAL CURRENT CONSUMPTION | 1,744         | 3,534         | 3,960         | 4,883        | 6,254         | 5,882         | 6,396         | 8,180         | 4,405   |  |  |  |     |  |





TABLE A-3

| Line    | Item   | Family Money Income----- |                   |                   |                   |                   |                   |                   |                  |         |  | ALL<br>CLASSES |
|---------|--|--------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|---------|--|----------------|
|         |  | Under<br>\$3,000         | \$3,000-<br>3,999 | \$4,000-<br>4,999 | \$5,000-<br>5,999 | \$6,000-<br>6,999 | \$7,000-<br>7,999 | \$8,000-<br>9,999 | Over<br>\$10,000 |         |  |                |
| Dollars |  |                          |                   |                   |                   |                   |                   |                   |                  |         |  |                |
| 22.     | TOTAL CURRENT<br>CONSUMPTION, EX-<br>CLUDING FOOD<br>EXPENDITURE | \$1,245                  | \$2,679           | \$2,887           | \$3,644           | \$4,858           | \$4,535           | \$5,096           | \$6,415          | \$3,361 |  |                |
| 23.     | TAXABLE CON-<br>SUMPTION,<br>AVERAGE TAX<br>STRUCTURE            | 402                      | 1,038             | 1,125             | 1,584             | 2,306             | 2,089             | 2,510             | 3,283            | 1,500   |  |                |
| 24.     | TAXABLE CON-<br>SUMPTION, ONTARIO<br>TAX STRUCTURE               | 432                      | 1,079             | 1,182             | 1,660             | 2,460             | 2,214             | 2,595             | 3,393            | 1,573   |  |                |

Source: See page 124.  
Note: Details may not add due to rounding.



TABLE A-4

DERIVATION OF ESTIMATES OF CONSUMPTION EXPENDITURE  
FARM FAMILY UNITS, ALBERTA, 1965

| Line | Item  | -----Family Money Income----- |                     |                     |                     |                     |                     |                     |                   |                |  |
|------|---|-------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-------------------|----------------|--|
|      |   | Under<br>\$3, 000             | \$3, 000-<br>3, 999 | \$4, 000-<br>4, 999 | \$5, 000-<br>5, 999 | \$6, 000-<br>6, 999 | \$7, 000-<br>7, 999 | \$8, 000-<br>9, 999 | Over<br>\$10, 000 | ALL<br>CLASSES |  |
| 1.   | Average Total<br>Current Consump-<br>tion, Non-Farm<br>Units, (Dollars)   | 1, 744                        | 3, 534              | 3, 960              | 4, 883              | 6, 254              | 5, 882              | 6, 396              | 8, 180            | 4, 405         |  |
| 2.   | Average Income,<br>Non-Farm Units<br>(Dollars)                            | 2, 197                        | 4, 486              | 5, 702              | 6, 670              | 7, 842              | 8, 687              | 10, 459             | 17, 929           | 6, 720         |  |
| 3.   | Ratio of Non-<br>Farm Consump-<br>tion to Non-Farm<br>Income              | .794                          | .788                | .694                | .732                | .798                | .677                | .612                | .456              | ...            |  |
| 4.   | Farm Income<br>(\$000, 000's)   | 59.4                          | 56.4                | 33.3                | 48.2                | 48.7                | 33.1                | 61.6                | 102.8             | 443.5          |  |
| 5.   | ESTIMATED TOTAL<br>CURRENT CON-<br>SUMPTION, FARM<br>UNITS (\$000, 000's) | 47.2                          | 44.4                | 23.1                | 35.3                | 38.9                | 22.4                | 37.7                | 46.9              | 295.8          |  |
| 6.   | Estimated Value<br>of Food and Fuel<br>Produced on Farm<br>(\$000, 000's) | 9.5                           | 4.1                 | 2.0                 | 2.6                 | 1.9                 | 1.1                 | 1.9                 | 1.8               | 25.0           |  |



TABLE A-4 (cont.)

|      |  | Family Money Income |                   |                   |                   |                   |                   |                   |                  |                |  |  |  |
|------|--|---------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|----------------|--|--|--|
| Line | Item   | Under<br>\$3,000    | \$3,000-<br>3,999 | \$4,000-<br>4,999 | \$5,000-<br>5,999 | \$6,000-<br>6,999 | \$7,000-<br>7,999 | \$8,000-<br>9,999 | Over<br>\$10,000 | ALL<br>CLASSES |  |  |  |
| 7.   | Food (\$000,000's)   | 8.5                 | 3.7               | 1.8               | 2.3               | 1.7               | 1.0               | 1.7               | 1.6              | 22.4           |  |  |  |
| 8.   | Fuel (\$000,000's)   | 1.0                 | .4                | .2                | .3                | .2                | .1                | .2                | .2               | 2.6            |  |  |  |
| 9.   | ESTIMATED TOTAL<br>MONEY EXPENDI-<br>TURE, FARM UNITS<br>(\$000,000's)   | 37.7                | 40.3              | 21.1              | 32.7              | 36.9              | 21.3              | 35.8              | 45.0             | 270.8          |  |  |  |
| 10.  | Total Current Con-<br>sumption, excluding<br>food expenditure,<br>as per cent of Total<br>Current Consumption,<br>Non-Farm Units       | 71.4                | 75.8              | 72.9              | 74.6              | 77.7              | 77.1              | 79.7              | 78.4             | ...            |  |  |  |
| 11.  | Estimated Total<br>Current Consump-<br>tion, excluding<br>food expenditure,<br>Farm Units<br>(\$000,000's)                             | 33.7                | 33.7              | 16.8              | 26.3              | 30.2              | 17.3              | 30.0              | 36.8             | 224.8          |  |  |  |
| 12.  | ESTIMATED TOTAL<br>CURRENT CONSUMP-<br>TION, EXCLUDING<br>FOOD AND HOME-<br>PRODUCED FUEL<br>CONSUMPTION, FARM<br>UNITS, (\$000,000's) | 32.7                | 33.3              | 16.6              | 26.0              | 30.0              | 17.2              | 29.8              | 36.6             | 222.2          |  |  |  |



TABLE A-4 (cont.)

| Line | Item   | Family Money Income |                   |                   |                   |                   |                   |                   |      | Over<br>\$10,000 | ALL<br>CLASSES |
|------|--|---------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------|------------------|----------------|
|      |  | Under<br>\$3,000    | \$3,000-<br>3,999 | \$4,000-<br>4,999 | \$5,000-<br>5,999 | \$6,000-<br>6,999 | \$7,000-<br>7,999 | \$8,000-<br>9,999 |      |                  |                |
| 13.  | Taxable Consumption, Average Tax Structure, as per cent of Total Consumption, Non-Farm Units (\$000,000's) | 23.1                | 29.4              | 28.4              | 32.4              | 36.9              | 35.5              | 39.2              | 40.1 | ...              |                |
| 14.  | ESTIMATED TAXABLE CONSUMPTION, AVERAGE TAX STRUCTURE, FARM UNITS (\$000,000's)                             | 10.9                | 13.1              | 6.6               | 11.4              | 14.4              | 8.0               | 14.8              | 18.8 | 97.8             |                |
| 15.  | Taxable Consumption, Ontario Tax Structure, as per cent of total consumption, Non-Farm Units               | 24.8                | 30.5              | 29.9              | 34.0              | 39.3              | 37.6              | 40.6              | 41.5 | ...              |                |
| 16.  | ESTIMATED TAXABLE CONSUMPTION, ONTARIO TAX STRUCTURE, FARM UNITS (\$000,000's)                             | 11.7                | 13.5              | 6.9               | 12.0              | 15.3              | 8.4               | 15.3              | 19.5 | 102.6            |                |

Source: See page 125.  
 Note: Details may not add due to rounding.





TABLE A-5

ESTIMATED TAX PAYMENTS, BY MONEY INCOME CLASS  
SELECTED RETAIL SALES TAX STRUCTURES, ALBERTA 1965

| Line            |                | Family Money Income |                   |                   |                   |                   |                   |                   |                    |                     |  | Over<br>\$10,000 | ALL<br>CLASSES |
|-----------------|----------------|---------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|---------------------|--|------------------|----------------|
|                 |                | Under<br>\$3,000    | \$3,000-<br>3,999 | \$4,000-<br>4,999 | \$5,000-<br>5,999 | \$6,000-<br>6,999 | \$7,000-<br>7,999 | \$8,000-<br>9,999 | \$9,000-<br>10,000 | \$10,000-<br>11,000 |  |                  |                |
| Millions        |                |                     |                   |                   |                   |                   |                   |                   |                    |                     |  |                  |                |
| CONSUMPTION TAX |                |                     |                   |                   |                   |                   |                   |                   |                    |                     |  |                  |                |
| 1.              | Non-Farm Units | 11.6                | 7.2               | 9.1               | 13.0              | 15.4              | 10.2              | 14.6              | 16.3               | 97.4                |  |                  |                |
| 2.              | Farm Units     | 2.4                 | 2.5               | 1.3               | 2.0               | 2.3               | 1.3               | 2.2               | 2.8                | 16.9                |  |                  |                |
| 3.              | All Units      | 13.9                | 9.7               | 10.4              | 15.1              | 17.7              | 11.6              | 16.8              | 19.1               | 114.3               |  |                  |                |
| FOOD-EXEMPT TAX |                |                     |                   |                   |                   |                   |                   |                   |                    |                     |  |                  |                |
| 4.              | Non-Farm Units | 8.3                 | 5.4               | 6.6               | 9.7               | 11.9              | 8.0               | 11.6              | 12.8               | 74.4                |  |                  |                |
| 5.              | Farm Units     | 2.0                 | 2.1               | 1.0               | 1.6               | 1.9               | 1.1               | 1.9               | 2.3                | 13.9                |  |                  |                |
| 6.              | All Units      | 10.3                | 7.5               | 7.7               | 11.4              | 13.8              | 9.0               | 13.5              | 15.1               | 88.3                |  |                  |                |
| AVERAGE TAX     |                |                     |                   |                   |                   |                   |                   |                   |                    |                     |  |                  |                |
| 7.              | Non-Farm Units | 5.9                 | 4.3               | 5.3               | 8.3               | 10.6              | 6.9               | 10.5              | 11.9               | 63.7                |  |                  |                |
| 8.              | Farm Units     | 1.4                 | 1.6               | .8                | 1.4               | 1.6               | .9                | 1.7               | 2.1                | 11.5                |  |                  |                |
| 9.              | All Units      | 7.3                 | 5.9               | 6.1               | 9.6               | 12.3              | 7.8               | 12.2              | 14.0               | 75.2                |  |                  |                |
| ONTARIO TAX     |                |                     |                   |                   |                   |                   |                   |                   |                    |                     |  |                  |                |
| 10.             | Non-Farm Units | 6.4                 | 4.6               | 5.7               | 9.0               | 11.8              | 7.6               | 11.4              | 13.0               | 69.6                |  |                  |                |
| 11.             | Farm Units     | 1.5                 | 1.7               | .9                | 1.5               | 1.8               | 1.0               | 1.8               | 2.3                | 12.6                |  |                  |                |
| 12.             | All Units      | 8.0                 | 6.3               | 6.6               | 10.5              | 13.6              | 8.6               | 13.3              | 15.3               | 82.2                |  |                  |                |
| CARTER TAX      |                |                     |                   |                   |                   |                   |                   |                   |                    |                     |  |                  |                |
| 13.             | All Units      | 9.4                 | 6.0               | 6.7               | 20.8              | 22.8              | 22.9              | 22.9              | 22.9               | 88.9                |  |                  |                |

Source: See page 126.

Note: Details may not add due to rounding.



TABLE A-6

ESTIMATES OF REVENUE YIELD AT 5 PER CENT TAX RATE  
SELECTED RETAIL SALES TAX STRUCTURES, ALBERTA, 1965

| Line                | Tax Structure              | -----Paid by Alberta Residents-----<br>Non-Farm Units    Farm Units    All Units | Paid By<br>Non-Residents | Total<br>Yield |
|---------------------|----------------------------|--|--------------------------|----------------|
| Millions of Dollars |                            |  |                          |                |
| 1.                  | CONSUMPTION TAX            | 97.4    16.9    114.3  | --                       | 114.3          |
| 2.                  | FOOD-EXEMPT TAX            | 74.4    13.9    88.3   | --                       | 88.3           |
| 3.                  | AVERAGE TAX                | 63.7    11.5    75.2   | 11.6                     | 86.7           |
| 4.                  | Paid Directly by Persons   | 42.9    7.9    50.7  | --                       | 50.7           |
| 5.                  | Paid Initially by Business | 20.8    3.6    24.4  | 11.6                     | 36.0           |
| 6.                  | ONTARIO TAX                | 69.6    12.6    82.2   | 10.9                     | 93.2           |
| 7.                  | Paid Directly by Persons   | 49.8    9.1    58.9  | --                       | 58.9           |
| 8.                  | Paid Initially by Business | 19.8    3.5    23.3  | 10.9                     | 34.2           |
| 9.                  | CARTER TAX                 | --    --    --   | --                       | 88.9           |

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Source: See page 127.  
Note: Details may not add to totals due to rounding.



NOTES ON THE APPENDIX TABLES

TABLE A-1

Lines 1, 2, 4, 10, and 11: The distribution of these items was based on unpublished data for the Prairie Provinces from the Dominion Bureau of Statistics 1965 survey of incomes, hereafter referred to as the 1965 Survey of Income. The published data is given in: Dominion Bureau of Statistics, Income Distribution By Size in Canada, 1965 (Ottawa: Queen's Printer, 1968). Unpublished tables provided estimates of the percentage composition of money incomes by source of income, for each money income class, and of the distribution of aggregate money income for the Prairies by money income class. In both cases, data was provided for non-farm units and for all units, but a farm breakdown was not given.

The distribution of an income component by income class was derived by weighting the proportion of total income of the income class obtained from the particular income source by the aggregate income of that class, and dividing by the proportion of total income of all income classes obtained from this income source. An example of





the calculation may help illustrate the procedure. Table A-1 indicates that 6.0 per cent of all wages and salaries were earned by persons with money incomes under \$3,000. The D. B. S. data estimated that 44.8 per cent of the income of family units in the under \$3,000 bracket was obtained from wages and salaries; that these units received 9.3 per cent of total money income for all income classes; and that 69.0 per cent of all money income was obtained from wages and salaries. The per cent of total wages and salaries earned by units in the under \$3,000 bracket equals:  $(.448 \times .093) \div .069$ , or 6.0 per cent.

Line 3: The distribution was based on the 1961 Canadian estimates given in: W.I. Gillespie, The Incidence of Taxes and Public Expenditures in the Canadian Economy ("Studies of the Royal Commission on Taxation, Number 2", Ottawa: Queen's Printer, 1966), Table A-1, p. 201. (The study is hereafter referred to as Gillespie.) The 1961 estimates were extrapolated to 1965 on the basis of changes in the distribution of Canadian wages and salaries between 1961 and 1965. An arbitrary 50-50 breakdown of incomes in the \$5,000 to \$6,999 bracket was made to obtain estimates for the \$5,000 and \$6,000 brackets individually. Similarly a one-third, two thirds allocation of the combined estimate for the \$7,000 to \$9,999 bracket



was made to obtain estimates for the \$7, 000 and \$8, 000 to \$9, 999 brackets.

Lines 5, 6, 12, and 13: The distribution is based on unpublished estimates, for Canada as a whole, of the percentage composition of incomes, obtained in the 1965 Survey of Incomes. The distribution was derived in the manner described above for lines 1, 2, 4, 10, and 11.

Line 7: The distribution is based on the distribution of liquid asset holdings of Canadian non-farm families in 1963 given in: Dominion Bureau of Statistics, Incomes, Assets and Indebtedness of Non-Farm Families in Canada, 1963 (Ottawa: Queen's Printer, 1966), Table 62.

Line 8: The distribution is based on an estimate of the distribution of the total value of owner-equity in housing, by money income class, obtained from:

- (1) the percentage of Edmonton family units, in each money income class, owning their own home, given in unpublished data from the Dominion Bureau of Statistics 1964 survey of urban family expenditure;
- (2) estimates of non-farm units by income class, (see Table 3.2) and;



(3) 1963 Canadian data on average equity-value of owner-occupied housing by income class, given in: Incomes, Assets and Indebtedness of Non-Farm Families in Canada, 1963, Table 30.

Line 9: The distribution is based on the distribution of life insurance premiums paid for Canadian family units given in Gillespie, Table A-1. The same assumptions as those described for line 3 were made to obtain breakdowns for the \$5, 000, \$6, 000, \$7, 000 and \$8, 000 to \$9, 999 brackets.

Line 14: The distribution was derived from the distributions of non-farm and total unincorporated business income (money), by weighting the distributions by national accounts estimates of farm and non-farm unincorporated business income (adjusted to remove imputed farm income).

Lines 15 and 16: The distribution is taken directly from the 1965 Survey of Income, Tables 3 and A-3 respectively.

Line 17: Derived from the distributions given in lines 15 and 16, using Alberta estimates of total and non-farm family units to weight the farm and non-farm distributions.

Lines 18, 19, 20 and 21: Obtained by weighting lines 21, 22, 23, and 24, Table A-3, respectively, by the distribution of units given in line 16.



Lines 22, 23, 24, and 25: Derived from the absolute distribution given in Table A-4, lines 9, 12, 14, and 16, respectively.

## TABLE A-2

The derivation of the personal income estimates for the various sources was described in Chapter III. The basic data source was: Dominion Bureau of Statistics, National Accounts, Income and Expenditure, 1966 (Ottawa: Queen's Printer, 1967), Tables 28-35.

The distribution of income among income classes for lines 2-4, 6-11, 16, 20, 21, 25, and 30-35 was made on the basis of the distributions given for these components in Table A-1.

Lines 13, 19, 22, and 23 were obtained as a residual (by subtracting non-farm income from the income of all family units).

Income of farm units from non-farm unincorporated business, line 14, was distributed similarly to farm money income, that is, in accordance with line 14, Table A-1.

Imputed farm income, line 17, was distributed in accordance with the distribution of farm family units, line 17, Table A-1.

Lines 1, 5, 12, 15, 18, 24, and 26-29 are totals or subtotals of the various individual income components.





TABLE A-3

The estimates of expenditure for individual income classes given in lines 1-21 were obtained directly from unpublished data for Edmonton family units from the Dominion Bureau of Statistics 1964 survey of urban family expenditure. The estimate of average expenditure for all income classes combined was revised to reflect the 1965 distribution, by money income class, of non-farm family units. Expenditure for each money income class was weighted by the distribution given in line 16, Table A-1, to obtain the estimate of average expenditure for all classes given in the final column of the table.

Line 23 includes: 10 per cent of expenditure for owned shelter; 100 per cent of expenditure for household operation, furnishings and equipment, and car purchase; 80 per cent of clothing expenditure; 20 per cent of car operation, other transportation, and 'other' expenditure; 55 per cent of personal expenditure; 70 per cent of recreation expenditure; and 40 per cent of tobacco and alcohol expenditures.

Line 24 includes 80 per cent of tobacco and alcohol expenditures; rather than 40 per cent, to reflect the higher rate on alcohol purchases under the Ontario tax structure.



TABLE A-4

Lines 1, 10, 13, and 15 were derived from Table A-3.

Lines 2 and 4 were obtained from Table 3.1.

Line 3 is the ratio of line 1 to line 2.

Estimated total farm consumption, line 5, was obtained by applying the non-farm ratios given in line 3 to total farm personal income per line 4.

Line 6 was obtained directly from line 17, Table A-2. The breakdown between food and fuel given in lines 7 and 8 was based on 1958 estimates of imputed expenditure of Prairie farm families given in: Dominion Bureau of Statistics, Farm Family Living Expenditure, 1958 (Ottawa: Queen's Printer, 1966), p. 24.

Line 9 was obtained by subtracting line 6 from line 5.

Line 11 was obtained by applying the ratio given in line 10 to total farm consumption, line 5.

Line 12 deducted home-produced fuel, line 8, from line 11.

Lines 14 and 16 were obtained by applying the non-farm ratios given in lines 13 and 15 to total farm consumption, line 5.



TABLE A-5

Total tax payments of Alberta residents were taken from Table A-6. It was assumed that the \$88.9 million estimate of revenue under the Carter Tax would be borne fully by Alberta residents. The distributions of the tax by money income class were derived from the distributive series given in Table A-1.

Lines 1 and 2 were distributed in accordance with lines 18 and 22, respectively, Table A-1.

Lines 4 and 5 were distributed in accordance with lines 19 and 23, respectively, Table A-1.

Line 7 was obtained by distributing the estimated yield paid directly by non-farm family units, (Line 4, Table A-6), in accordance with line 20, Table A-1, and the burden of business taxation on non-farm family units, (Line 5, Table A-6), in accordance with line 18, Table A-1.

Line 8 was obtained in a similar manner, distributing the tax paid directly by farm units in accordance with line 24, Table A-1, and the burden of business taxation on farm units in accordance with line 22, Table A-1.

Lines 10 and 11 were distributed using the same method applied for lines 7 and 8, substituting lines 21 and 25, Table A-1, to dis-





tribute the tax burden borne directly by individuals.

Lines 3, 6, 9, and 12 are totals of the farm and non-farm components.

The Carter Tax distribution given in line 13 was obtained by multiplying the tax-liabilities for each income class given in the Report of the Royal Commission on Taxation, VI, Table E-2, p. 284, (reduced to 5/7ths to allow for a 5 per cent rate, rather than the 7 per cent rate for which the estimates were prepared), by estimates of the number of units in each income class given in Table 3.2.

#### TABLE A-6

The Consumption Tax: The estimated yield is based on an estimate of total Alberta money consumption expenditure in 1965. The latter estimate was obtained by applying a 1961-1966 average of the ratios of Alberta personal disposable income to Canadian personal disposable income, to 1965 Canadian money consumer expenditure on goods and services. The personal disposable income data was taken from: National Accounts, Income and Expenditure, 1966, Table 30. Canadian money consumer expenditure was obtained from the same source, Tables 27 and 49, by deducting



imputed items included in personal expenditure on consumer goods and services given in Table 49, from total personal expenditure on consumer goods and services per Table 47. This procedure yielded an estimate of \$2,286 millions for Alberta money consumption expenditure in 1965. Applying the assumed 5 per cent rate yielded an estimate of tax revenues of \$114.3 millions.

The farm yield is based on the ratio of total farm money expenditure, line 9, Table A-4, to total money consumption expenditure. In this instance, the total was obtained by adding to farm consumption per Table A-4 an estimate of non-farm money consumption based on the average expenditure given in line 21, Table A-3. This resulted in the allocation of 14.8 per cent of the total yield to farm units.

The Food-Exempt Tax: Estimated yield was based on the same estimate of total Alberta money consumption expenditure, after deducting an estimate of food expenditures. The estimate of money food expenditures, 22.8 per cent of total money expenditures, was based on the farm and non-farm consumption estimates given in Tables A-3 and A-4, (total non-farm food expenditure was obtained by multiplying average food expenditures given in line 1, Table A-3 by total non-farm family units.)



The farm yield is based on farm money expenditures excluding food, line 12, Table A-4, as a per cent of total non-food money expenditures, obtained by adding to the farm figure, an estimate of total non-farm money expenditures, excluding food, based on the average expenditure given in line 22, Table A-3. This resulted in the allocation of 15.7 per cent of the total yield to farm units.

The Average Tax: The estimated yield of \$86.7 millions was based on a detailed estimate of the tax base. The tax base was broken into seven components: taxable retail sales, excluding sales of meals by retail establishments, (\$942.7 million); construction materials (\$497.5); production machinery and equipment (\$136.0); local telephone charges (\$28.7); hotel and motel accommodation (\$25.9); meals (\$56.5); and liquor sales by service establishments (\$45.3). The total estimated tax base was \$1,732.6 millions.

Taxable retail sales were estimated to include 58.9 per cent of total Alberta retail sales. Excluded from the base were: food sales (21.7 per cent of total retail sales); tobacco (1.6 per cent); children's clothing (2.5 per cent); repairs and services (4.0 per cent); prescribed medicines (0.7 per cent); newspapers, magazines, and books (0.5 per cent); farm supplies (2.9 per cent); gasoline sales





(6.2 per cent); fuel oil (0.6 per cent); and sales of meals by retail establishments (0.4 per cent). The percentage distribution of retail sales by commodities was based on 1961 Alberta data provided in: Dominion Bureau of Statistics, Census of Canada, 1961, Bulletin 6.1-7, (Ottawa: Queen's Printer, 1966), Tables 23 and 26. The proportion of the tax base allocated to business, 5.8 per cent, was based on the 1961 Census analysis of Alberta retail sales by type of customer given in: Census of Canada, 1961, Bulletin 6.1-5, Table 1. Retail sales are given in Dominion Bureau of Statistics, Retail Trade, January, 1967 (Ottawa: Queen's Printer, 1967), Table 10.

The estimate of taxable sales of construction materials was obtained from data on the total value of Alberta construction in 1965, from which church and hospital construction was excluded, and on the ratio of material costs to total value of construction. Data on total value of construction, by type of construction, is given in: Dominion Bureau of Statistics, Construction in Canada, 1965-67 (Ottawa: Queen's Printer, 1967), Table 26. Total value of construction was \$1093.7 million, from which \$26.2 million church and hospital construction was excluded. Table 7 of Construction in Canada, 1965-67 estimated material costs to be 46.6 per cent of the total value of Alberta construction. Applying this percent-





age to the value of taxable construction, \$1,067.5 million, resulted in the estimated tax base of \$497.5 million. The entire tax base was allocated to the business sector.

The estimate of taxable purchases of production machinery and equipment was based on retail sales tax revenue estimates given in the 1969 Ontario Budget, page 39. The Alberta estimate was based on the ratio of Alberta machinery and equipment investments to that of Ontario, after reducing the Ontario estimate to reflect the level of machinery and equipment investments in 1965. Data for 1965 was obtained from: Dominion Bureau of Statistics, Public and Private Investment in Canada, Outlook 1967 (Ottawa: Queen's Printer, 1967), Tables 18 and 21. 1969 data was obtained from the same publication, for 1969. The entire tax base was allocated to the business sector.

The estimate of local telephone charges was obtained from: Dominion Bureau of Statistics, Telephone Statistics, 1965 (Ottawa: Queen's Printer, 1967), Table 18. It was assumed that 40 per cent of the expenditures would be made by business.

Expenditures for hotel accommodation, \$18.1 million, were obtained from estimates of 'receipts of hotels from room rentals' given in: Dominion Bureau of Statistics, Hotels, 1965 (Ottawa:



Queen's Printer, 1968), Table 5. Expenditures for motel accommodation, tourist courts, etc, were based on 1961 receipts, \$6.1 million, given in: Census of Canada, 1961, Bulletin 6.2-10, (Ottawa: Queen's Printer, 1965), Table 39, extrapolated to 1965 on the basis of growth in hotel receipts, giving a 1965 estimate of \$7.8 millions. It was assumed 25 per cent of hotel and motel accommodation expenditures would be made by business.

Total sales of meals by eating places were estimated from 1961 sales, \$46.8 million, given in Census of Canada, 1961, Bulletin 6.2-10, Table 39, extrapolated to 1965 on the basis of retail sales growth, giving a 1965 estimate of \$57.0 million. Food sales of retail establishments, \$6.4 million, were based on the data on retail sales by commodities discussed above. Expenditures on meals in hotels, \$13.4 millions, were obtained from the data on hotel receipts given in Hotels, 1965, Table 5. It was assumed that 75 per cent of meal expenditures in eating places, 25 per cent of meal expenditures in retail establishments, and 90 per cent of meal expenditures in hotels would be taxable under the \$1.00 exemption for meal expenditures assumed in the Average Tax structure. It was assumed that 16 per cent of taxable expenditures would be made by businesses.



Liquor sales by hotels, \$40.3 million, were obtained from Hotels, 1965, Table 5. Data on liquor sales by other non-retail establishments--cocktail and dining lounges, cabarets, etc., not a part of hotels--is not available. An estimate of \$5.0 million was included in the tax base. It was assumed 7.5 per cent of non-retail liquor expenditures would be made by business.

Of the total tax base of \$1,732.6 million, \$718.6 million was allocated to the business sector, giving estimated revenues from the tax on business expenditures of \$36.0 million. The proportion of the business tax allocated to non-residents, 32 per cent, was based on 1961 estimates of Alberta exports given in: R.W. Wright, The Alberta Economy, An Input-Output Analysis (The University of Calgary, mimeograph, 1965), pp. 27-28.

The Ontario Tax: Estimates of tax yield, and the distribution between the business and personal sectors, were made using the same sources and assumptions used for the Average Tax, with the following exceptions:

(1) An estimate of amusement admissions was added to the tax base. The estimate was based on receipts of theatres, movie houses, etc., in 1961, \$9.0 million, given in: Census of Canada, 1961, Bulletin 6.2-10, Table 39, extrapolated to 1965 on the basis





of personal income growth, giving a 1965 estimate of \$12.0 million.

(2) The tax base was broken into two categories, one for expenditures taxed at 5 per cent, the other for expenditures taxed at 10 per cent. Included in the latter category were: meals, liquor sales, and amusement admissions.

(3) Construction expenditures of municipalities and other institutional construction were excluded from the construction materials base, reducing the tax base from \$497.5 million under the Average Tax, to \$461.1 million for the Ontario Tax.

(4) To account for the \$2.50 meal exemption under the Ontario Tax structure, it was assumed that all sales of meals by retail establishments would be exempt, that 50 per cent of sales by eating places would be exempt, and that 25 per cent of sales of meals in hotels would be exempt.

The total tax base taxable at 5 per cent was estimated to be \$1,517.6 million, of which the business share was estimated to be \$665.3 million. The tax base taxable at 10 per cent was estimated at \$172.7 million, of which \$9.6 million was allocated to the business sector.

The Carter Tax: The estimate of yield was based on estimates of tax liability by income class given in: Report of the Royal Commission on Taxation, VI, Table E-2, p. 284. No estimate of the



proportion of the tax paid by business was made.





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